Preliminary User's Manual

Rainier 3G series

Revision 1.0.2
(May, 2012)

WARNING

Do not attempt to disassemble your Rainier 3G device. Doing so may void your warranty. There are no serviceable parts inside. Please refer all servicing to qualified personnel.

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Warranty

Avitech International Corporation (herein after referred to as “Avitech”) warrants to the original purchaser of the products manufactured in its facility (the “Product”), that these products will be free from defects in material and workmanship for a period of one (1) year or fifteen (15) months from the date of shipment of the Product to the purchaser. There is a three (3) month grace period between shipping and installation.

If the Product proves to be defective during the one (1) year warranty period, the purchaser’s exclusive remedy and Avitech’s sole obligation under this warranty is expressly limited, at Avitech’s sole option, to:
(a) repairing the defective Product without charge for parts and labor; or
(b) providing a replacement in exchange for the defective Product; or
(c) if after a reasonable time is unable to correct the defect or provide a replacement Product in good working order, then the purchaser shall be entitled to recover damages subject to the limitation of liability set forth below.

LIMITATION OF LIABILITY: AVITECH’S LIABILITY UNDER THIS WARRANTY SHALL NOT EXCEED THE PURCHASE PRICE PAID FOR THE DEFECTIVE PRODUCT. IN NO EVENT SHALL AVITECH BE LIABLE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOSS OF PROFITS FOR ANY BREACH OF THIS WARRANTY.

If Avitech replaces the defective Product with a replacement Product as provided under the terms of this Warranty, in no event will the term of the warranty on the replacement Product exceed the number of months remaining on the warranty covering the defective Product. Equipment manufactured by other suppliers and supplied by Avitech carries the respective manufacturer’s warranty. Avitech assumes no warranty responsibility either expressed or implied for equipment manufactured by others and supplied by Avitech.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE EXPRESSLY DISCLAIMED.

This Hardware Warranty shall not apply to any defect, failure, or damage:
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(b) resulting from attempts by other than Avitech representatives to install, repair, or service the Product;
(c) caused by installation of the Product in a hostile operating environment or connection of the Product to incompatible equipment; or
(d) caused by the modification of the Product or integration with other products when the effect of such modification or integration increases the time or difficulties of servicing the Product.

Any Product which fails under conditions other than those specifically covered by the Hardware Warranty, will be repaired at the price of parts and labor in effect at the time of repair. Such repairs are warranted for a period of ninety (90) days from date of reshipment to customer.

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Avitech offers OPTIONAL Extended Warranty plans that provide continuous coverage for the Product after the expiration of the Warranty Period. Contact an Avitech sales representative for details on the options that are available for your Avitech equipment.

Services and Repairs Outside the Warranty Period

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Regulatory Information

NOTE: Marking labels located on the exterior of your device indicate the regulations that your model complies with. Please check the marking labels on your device and refer to the corresponding statements in this chapter. Some notices apply to specific models only.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Avitech is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

European Union CE Marking and Compliance Notices

Statements of Compliance

English
This product follows the provisions of the European Directive 1999/5/EC.

Danish
Dette produkt er i overensstemmelse med det europæiske direktiv 1999/5/EC.

Dutch
Dit product is in navolging van de bepalingen van Europees Directief 1999/5/EC.

Finnish
Tämä tuote noudattaa EU-direktiivin 1999/5/EC määräyksiä.

French
Ce produit est conforme aux exigences de la Directive Européenne 1999/5/EC.

German
Dieses Produkt entspricht den Bestimmungen der Europäischen Richtlinie 1999/5/EC.

Greek
Το προϊόν αυτό πληροί τις προβλέψεις της Ευρωπαϊκής Οδηγίας 1999/5/EC.

Icelandic
Þessi vara stenst reglugerð Evrópska Efnahags Bandalagsins númer 1999/5/EC.

Italian
Questo prodotto è conforme alla Direttiva Europea 1999/5/EC.

Norwegian
Dette produktet er i henhold til bestemmelsene i det europeiske direktivet 1999/5/EC.

Portuguese
Este produto cumpre com as normas da Diretiva Européia 1999/5/EC.

Spanish
Este producto cumple con las normas del Directivo Europeo 1999/5/EC.

Swedish
Denna produkt har tillverkats i enlighet med EG-direktiv 1999/5/EC.

Australia and New Zealand C-Tick Marking and Compliance Notice

Statement of Compliance

This product complies with Australia and New Zealand's standards for radio interference.

Preface

Welcome

Congratulations on purchasing the Avitech Rainier 3G.

The Rainier 3G allows you to monitor up to eight 3G / HD / SD-SDI / PAL / NTSC sources in a single module via a full HD-SDI 1080p signal. Its built-in 8×8 crosspoint switch enables powerful multiviewing by efficiently managing inputs through flexible integration.

You can easily expand the system by cascading up to eight Rainier 3G to allow the monitoring of up to 64 sources on either one or two screens.

About this Manual

This manual contains comprehensive information about your Avitech Rainier 3G to help you operate the device.

Throughout the manual the following conventions are used to distinguish elements of text.

> **NOTE:** provides additional hints or information that requires special attention.

> **CAUTION:** identifies important information which, if not followed, may result in loss of data or damage to your device.

Any name of menu, command, icon or button that you can see on the screen is shown in a bold typeset. For example:

On the **Start** menu select **Settings**.

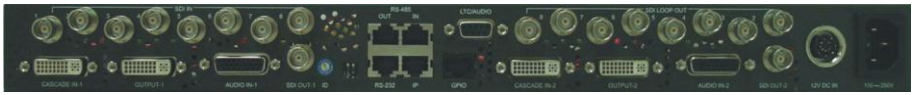
1 Getting Started

This chapter introduces you to the features and specifications as well as the external components of your Avitech Rainier 3G. It also guides you through the process of setting up your Rainier 3G for use.

> **NOTE:** Depending on the model you purchased the cabinet color and the look of the accessories may be different from the ones shown in this manual.

1.1 Package Contents

After unpacking the shipping carton you should find these standard items:



Avitech Rainier 3G

Standard Power Cord (US customers only)

12 V DC Power Adapter (optional) *

RS-485 Cascading Cable
(optional – when purchasing 2 or more Rainier 3G)

DVI Cascading Cable
(optional – when purchasing 2 or more Rainier 3G)

RJ-50 GPI Terminal Block

Utility Disc (contains software and user's manual)

DVI-to-HDMI® Adapter (optional)

DVI-to-VGA Adapter (optional)

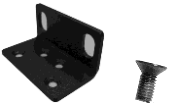
Proprietary DB26 to 16 BNC Breakout Cable (optional)

Proprietary DB9 to 4 BNC Breakout Cable (optional)

DVI-I Male-to-Female Cable (optional) **

Avitech TACP (optional) ***

Proprietary RJ-45 to RS-232 (DB9-FM) Cable (optional – refer to the "NOTE" below.)



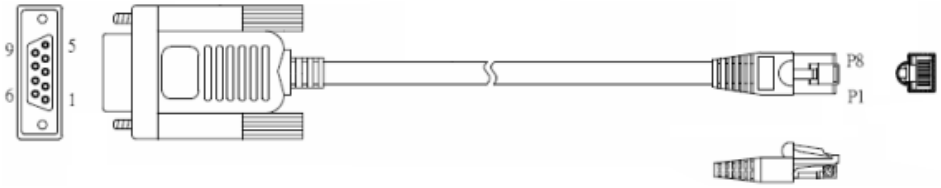
Ear with screw (already installed on Rainier 3G upon order for assembly on to rack mount)

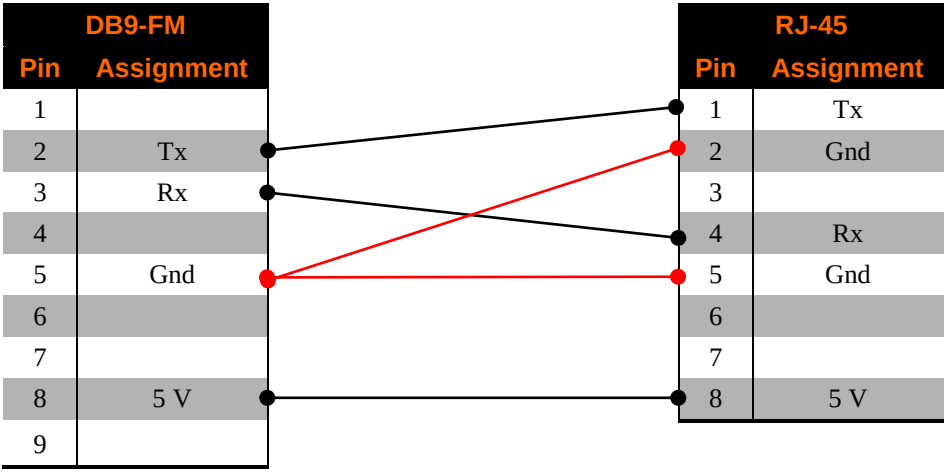
* This is an optional external power supply along with the associated dual power supply PCBA inside the Rainier 3G to achieve power redundancy. If this optional external power supply is connected power (AC or DC) can be unplugged on the Rainier 3G without affecting the power supply to the unit.

** When using the DVI-I female connector on the Rainier 3G the connector may easily be damaged if the DVI-I plug (male) has bended pins. With this optional DVI-I male-to-female cable permanently connected to the Rainier 3G frequent connection and disconnection will only occur to the female end of this short cable, rather than to the female connector of the Rainier 3G.

*** The Avitech TACP can be used with the Rainier 3G. Contact your authorized dealer or refer to the TACP User Manual for more details.

> **NOTE:** Due to space limitation the serial connector is replaced with a RJ-45 connector. A proprietary RJ-45 to RS-232 (DB9-FM) cable is needed for serial function. The pin definition is shown next.





1.2 Product Features

Model	HD/SD-SDI/ NTSC/PAL Input	DVI/VGA/ HDMI Input	Looping Output on SDI	8×8 SDI Crosspoint Switch
Rainier 3G-4E Rainier 3G-4A Rainier 3G-4D	4	1	N/A*	N/A
Rainier 3G-4E/4E Rainier 3G-4A/4A Rainier 3G-4D/4D Rainier 3G-4A/4E Rainier 3G-4A/4D Rainier 3G-4E/4D	8	2	N/A	N/A
Rainier 3GL-4E/4E Rainier 3GL-4A/4A Rainier 3GL-4D/4D Rainier 3GL-4A/4E Rainier 3GL-4A/4D Rainier 3GL-4E/4D	8	2	8	N/A

Model	HD/SD-SDI/ NTSC/PAL Input	DVI/VGA/ HDMI Input	Looping Output on SDI	8×8 SDI Crosspoint Switch
Rainier 3GC-4E/4E Rainier 3GC-4A/4A Rainier 3GC-4D/4D Rainier 3GC-4A/4E Rainier 3GC-4A/4D Rainier 3GC-4E/4D	8	2	N/A	Built-in
Rainier 3GLC-4E/4E Rainier 3GLC-4D/4D Rainier 3GLC-4A/4A Rainier 3GLC-4A/4E Rainier 3GLC-4A/4D Rainier 3GLC-4E/4D	8	2	8	Built-in

* N/A means not applicable

Model	Embedded Audio	Analog Stereo Audio	Digital Audio
Rainier 3G-4E	4	N/A	N/A
Rainier 3G-4A	N/A	4	N/A
Rainier 3G-4D	N/A	N/A	4
Rainier 3G-4E/4E Rainier 3GL-4E/4E Rainier 3GC-4E/4E Rainier 3GLC-4E/4E	8	N/A	N/A
Rainier 3G-4A/4A Rainier 3GL-4A/4A Rainier 3GC-4A/4A Rainier 3GLC-4A/4A	N/A	8	N/A
Rainier 3G-4D/4D Rainier 3GL-4D/4D Rainier 3GC-4D/4D Rainier 3GLC-4D/4D	N/A	N/A	8
Rainier 3G-4A/4E Rainier 3GL-4A/4E Rainier 3GC-4A/4E Rainier 3GLC-4A/4E	4	4	N/A

Model	Embedded Audio	Analog Stereo Audio	Digital Audio
Rainier 3G-4A/4D Rainier 3GL-4A/4D Rainier 3GC-4A/4D Rainier 3GLC-4A/4D	N/A	4	4
Rainier 3G-4E/4D Rainier 3GL-4E/4D Rainier 3GC-4E/4D Rainier 3GLC-4E/4D	4	N/A	4

- Supports up to eight:
  – HD 3G/1.5G / SD-SDI / PAL / NTSC input sources per unit
  – HD 3G/1.5G / SD-SDI loop outs
- Two HD-SDI (3G) and two DVI-I outputs
- Looping output – option
- Two DVI-I inputs for cascading
- Dual AES audio inputs and one AES audio output for monitoring
- Audio meters for embedded audio with phase, AES (balanced / unbalanced), analog audio – option.

NOTE:
- Embedded digital audio streams into high definition digital video signals.
- AES (Audio Engineering Society) – Officially known as AES3, it is a digital audio standard used for carrying digital audio signals between various devices. AES was designed primarily to support PCM (pulse-code-modulated) encoded audio in either DAT (digital audio tape) format at 48 kHz or compact disc format at 44.1 kHz.
- Analog audio is superior to digital audio due to the absence of fundamental error mechanisms which are present in digital audio systems; including aliasing, quantization noise, and supposed limitations in dynamic range.

- On-screen display of:
  – labels
  – 3D borders
  – closed caption (CC) for NTSC / PAL input signal
  – V-chip display (future option)
  – alarms (video loss, video freeze, black video, audio loss / audio high / audio low detection)
  – VU / PPM ballistic scale meter (user-adjustable)
  – interpreted WSS, LTC and AFD metadata for aspect ratio adjustment, time code display and formatting.
- Communication control via IP or RS-232 [via proprietary RJ-45 to RS-232 (DB9-FM) cable].
- Compatibility with Phoenix-Q software for configuration, monitor layout, and multiple-system control.
- Avitech ASCII Protocol (AAP) support.

Specifications

Parts		Specifications
Inputs	Video	Automatic sensing via BNC 3G HD-SDI (1080p 60 Hz, 1080p 59.94 Hz, 1080p50 Hz) 4:2:2 1.5G HD-SDI (1080p 30 Hz, 1080p 29.97 Hz, 1080p 25 Hz, 1080p 24 sf (segmented frame), 1080p 23.98 sf, 1080i 59.94 Hz, 1080i 60 Hz, 1080i 50 Hz, 1035i 60 Hz, 1035i 59.94 Hz, 720p 59.94 Hz, 720p 60 Hz, 720p 50 Hz) SD-SDI (NTSC/480i 60 Hz, NTSC/480i 59.94 Hz, PAL/576i 50 Hz) Composite analog (NTSC, PAL) **NOTE:** It is highly recommended that you connect the composite analog signal to **SDI IN 2** / **4** / **6** / **8** ports for optimum image quality. Number of inputs: (for Rainier 3G-4E / 4A / 4D) four automatic detection 3G / 1.5G HD-SDI, SD-SDI, and composite video (PAL / NTSC) plus one DVI / VGA / HDMI (this input can be used as background or to cascade with another Rainier 3G module) (for Rainier 3G-4E/4E / 4A/4A / 4D/4D / 4A/4E / 4A/4D / 4E/4D / for Rainier 3GL-4E/4E / 4A/4A / 4D/4D / 4A/4E / 4A/4D / 4E/4D / for Rainier 3GC-4E/4E / 4A/4A / 4D/4D / 4A/4E / 4A/4D / 4E/4D / for Rainier 3GLC-4E/4E / 4A/4A / 4D/4D / 4A/4E / 4A/4D / 4E/4D) eight automatic detection 3G / 1.5G HD-SDI, SD-SDI, and composite video (PAL / NTSC) plus two DVI / VGA / HDMI (this input can be used as background or to cascade with another Rainier-3G module)
Output	Video	HD: 720p at 50 / 60Hz DVI-I v1.3: maximum up to 1920×1080 at 50 / 60 Hz Number of output: 2 3G SDI: 1080p at 50 / 60Hz (4:2:2) Number of output: 1 (for Rainier 3G-4E / 4A / 4D) 2 (for Rainier 3G-4E/4E / 4A/4A / 4D/4D / 4A/4E / 4A/4D / 4E/4D / for Rainier 3GL-4E/4E / 4A/4A / 4D/4D / 4A/4E / 4A/4D / 4E/4D / for Rainier 3GC-4E/4E / 4A/4A / 4D/4D / 4A/4E / 4A/4D / 4E/4D / for Rainier 3GLC-4E/4E / 4A/4A / 4D/4D / 4A/4E / 4A/4D / 4E/4D) **NOTE:** No 3G SDI video output is possible when the item **Output Timing** in Phoenix-Q program is set at **VESA**.
	Loop	Available for Rainier 3GL-4E/4E / 4A/4A / 4D/4D / 4A/4E / 4A/4D / 4E/4D and Rainier 3GLC-4E/4E / 4A/4A / 4D/4D / 4A/4E / 4A/4D / 4E/4D Number of output: 8

Parts		Specifications
Audio input	Analog	2-channel per video Available for Rainier 3G-4A / 4A/4A / 4A/4E / 4A/4D / Rainier 3GL-4A/4A / 4A/4E / 4A/4D / Rainier 3GC-4A/4A / 4A/4E / 4A/4D / Rainier 3GLC-4A/4A / 4A/4E / 4A/4D
	AES	4-channel per video (balanced and unbalanced) Available for Rainier 3G-4D / 4D/4D / 4A/4D / 4E/4D / Rainier 3GL-4D/4D / 4A/4D / 4E/4D / Rainier 3GC-4D/4D / 4A/4D / 4E/4D / Rainier 3GLC-4D/4D / 4A/4D / 4E/4D
	Embedded	8-channel per video Available for Rainier 3G-4E / 4E/4E / 4A/4E / 4E/4D / Rainier 3GL-4E/4E / 4A/4E / 4E/4D / Rainier 3GC-4E/4E / 4A/4E / 4E/4D / Rainier 3GLC-4E/4E / 4A/4E / 4E/4D
Audio output		AES audio-out for monitoring (via proprietary DB9 to 4 BNC breakout cable)
GPI		8 inputs
Data input / output	Serial port	Number of port: 1 [via proprietary RJ-45 to RS-232 (DB9-FM) cable] Baud rate: up to 1 Mbaud RS-232 one proprietary RJ-45 to RS-232 (DB9-FM) cable (for serial function)
	RS-485	Number of ports: 2
Power supply		Maximum consumption 70 watts Input: 100 ─ 240 V, 50 / 60 Hz; Output: 12 V DC (external)
Housing		Metal
Dimension (L×W×H)		364.5×439×44.4 mm (14.35×12.28×1.75 inch)
Weight		3.8 kg (8.36 lbs)
Environment	Temperature	Operating: 0 °C (32 °F) to 40 °C (104 °F) Storage: –10 °C (–4 °F) to 50 °C (122 °F)
	Humidity	0 % to 80 % relative, non-condensing
Safety regulations		FCC / CE / C-Tick, Class A

Operating Features

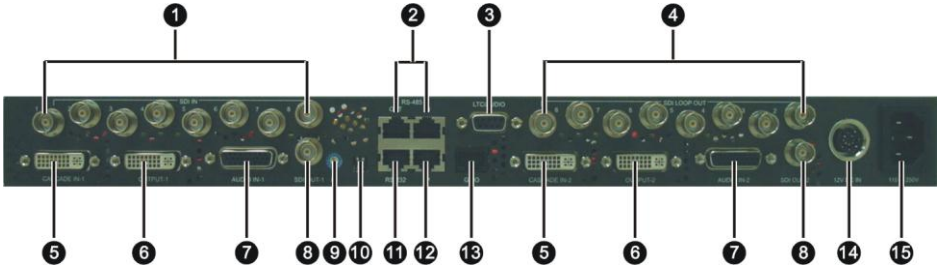
- Reliability, no single point of failure.
  – a module's failure will not bring down the entire system
  – standby back-up scheme to cover monitor display failure scenario
  – dual power supply with DC input
  – replaceable front fan module

- Expandability.
  Standalone operation (single Rainier 3G) with control via RS-232 cable / IP or; multiple operations (cascade up to eight Rainier 3G for monitoring of up to 64 sources on either one or two screens).
- Compact yet flexible.
  Internal two way and external cascade architecture.
- Router integration.
  Built-in 8×8 crosspoint switch.
- One Rainier 3G can fit in a single rack unit (RU) space for a maximum of eight HD / SD-SDI / NTSC / PAL inputs and two DVI / VGA inputs.
- Automatic input signal sensing and output monitor resolution detection.
- Audio delay support.
- Proprietary DB9 to 4 BNC breakout cable for SPDIF IN/OUT.
- RJ-50 GPI terminal block adapter is provided for tally or loading presets.
- Up to 26 presets / configurations can be saved and recalled from the module's Flash EEPROM.
- Picture-in-Picture (PiP) display
- Video control that includes free-scaling windows, adjustable safe area, crop and pan, as well as aspect ratio control.

1.3 Identifying the Front Hardware Components

Ref	Component	Description
❶	Power LED	Lights green when the Rainier 3G is powered on.

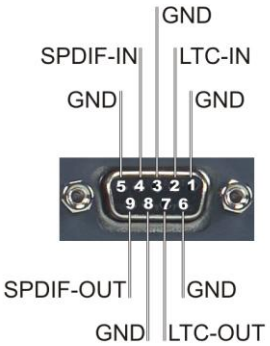
1.4 Identifying the Rear Hardware Components



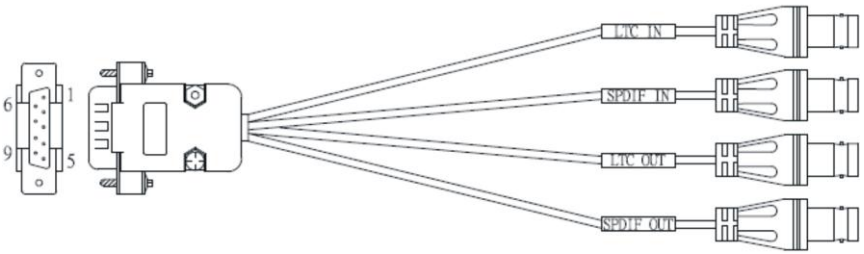
Ref	Label / Component	Description
❶	**Video Input (SDI IN 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8)**	BNC connectors for 3G / 1.5G HD / SD-SDI / composite video input sources. **NOTE:** It is highly recommended that you connect the composite video input source to **SDI IN 2** / **4** / **6** / **8** ports for optimum image quality.
❷	**RS-485 (IN) (OUT)**	RS-485 connectors for serial cascading input / output.
❸	**LTC/AUDIO**	AES audio input / output for monitoring via proprietary DB9 to 4 BNC breakout cable (SPDIF IN/OUT) as well as for pulling LTC timecode out of serial digital video and displaying it (LTC IN/OUT). **NOTE:** Refer to the next figure for the pin-out assignments.
❹	**SDI LOOP OUT 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8**	BNC connectors for 3Gbps / 1.5Gbps HD / SD-SDI video input loop (passive for analog video, active for digital video).
❺	**CASCADE IN-1 / 2**	DVI-I connectors for multimedia input (cascade from other Rainier 3G device or from other video source as background image).
❻	**OUTPUT-1 / 2**	DVI-I connector for output to monitor display. **NOTE:** When using the DVI-to-VGA adapter for output to monitor display, make sure to set the **Output Timing** item in the **Properties** portion of the Phoenix-Q program to **VESA**.

Ref	Label / Component	Description
❼	**AUDIO IN-1 / 2**	Each connector can include up to four analog stereo pairs / AES audio inputs via proprietary DB26 to 16 BNC breakout cable. **NOTE:** Refer to the next figure for the pin-out assignments.
❽	**SDI OUT-1 / 2**	BNC connector supports 3Gbps HD-SDI signal for long distance output to monitor display. **NOTE:** No video output from this port is possible when the item **Output Timing** in Phoenix-Q program is set at **VESA**.
❾	**ID**	Rotary dial to assign unique addresses in systems with two or more units.
❿	**DIP switches**	The left dip switch is for updating the firmware while the right dip switch is for returning the Rainier 3G to the factory-default setting.
⓫	**RS-232**	RJ-45 connector for signal from the computer via the proprietary RJ-45 to RS-232 (DB9-FM) cable.
⓬	**IP**	Ethernet connector for using the computer's Phoenix-Q software to perform setup on the Rainier 3G.
⓭	**GPIO**	RJ-50 connector for GP input.
⓮	**12V DC IN**	Connects to the power adapter.
⓯	**110~250V**	Power jack for connecting the AC power cord.

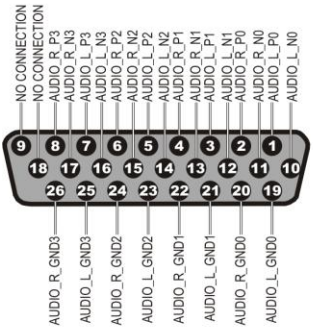
Proprietary DB9 to 4 BNC Breakout Cable



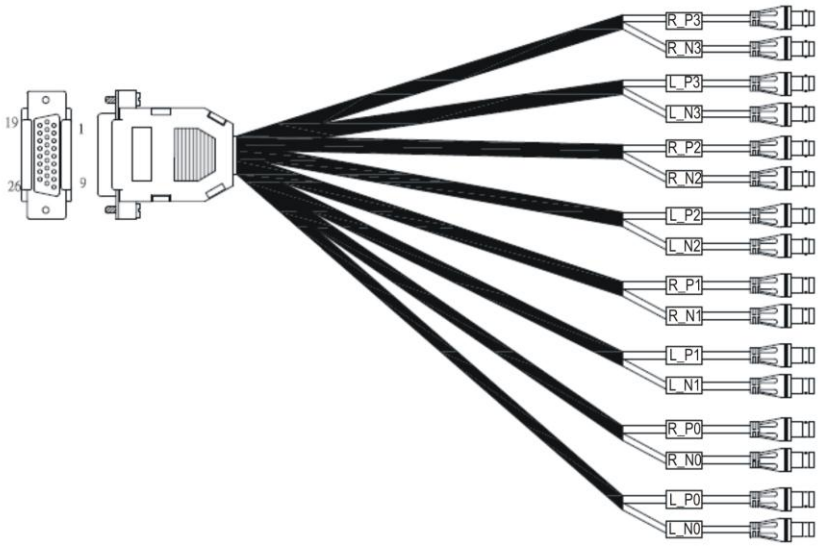
DB9-FM	
Pin	Assignment
1	Ground
2	LTC-in
3	Ground
4	SPDIF-in
5	Ground
6	Ground
7	LTC-out
8	Ground
9	SPDIF-out



Proprietary DB26 to 16 BNC Breakout Cable



DB26-FM					
Pin	Assignment	Pin	Assignment	Pin	Assignment
1	Audio_L_P0	10	Audio_L_N0	19	Audio_L_Gnd0
2	Audio_R_P0	11	Audio_R_N0	20	Audio_R_Gnd0
3	Audio_L_P1	12	Audio_L_N1	21	Audio_L_Gnd1
4	Audio_R_P1	13	Audio_R_N1	22	Audio_R_Gnd1
5	Audio_L_P2	14	Audio_L_N2	23	Audio_L_Gnd2
6	Audio_R_P2	15	Audio_R_N2	24	Audio_R_Gnd2
7	Audio_L_P3	16	Audio_L_N3	25	Audio_L_Gnd3
8	Audio_R_P3	17	Audio_R_N3	26	Audio_R_Gnd3
9	NC	18	NC		



Each window can support four pairs of audio source (comprised of left and right channel on each pair, hence the 8-channel).

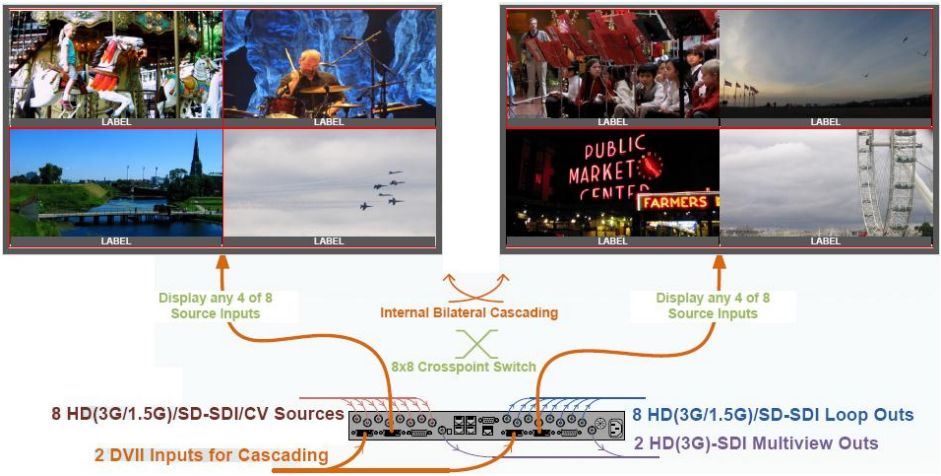
The left and right channel of each pair must have the same source (e.g., embedded audio for both left and right channel). Setting the left channel as embedded audio and then setting the right channel as analog audio is not allowed.

But different pairs can have different sources (e.g., pair 1 can have embedded audio as its source; pair 2 can have analog audio as its source, and so forth).

1.5 Application Scenarios

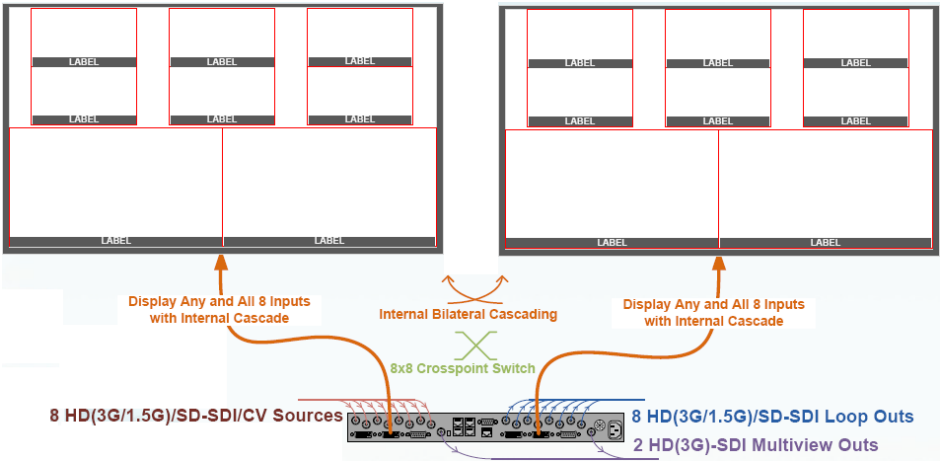
The following figures are for illustration purposes only. Select the appropriate configuration based on your requirements.

One Rainier 3G connected to two monitor displays



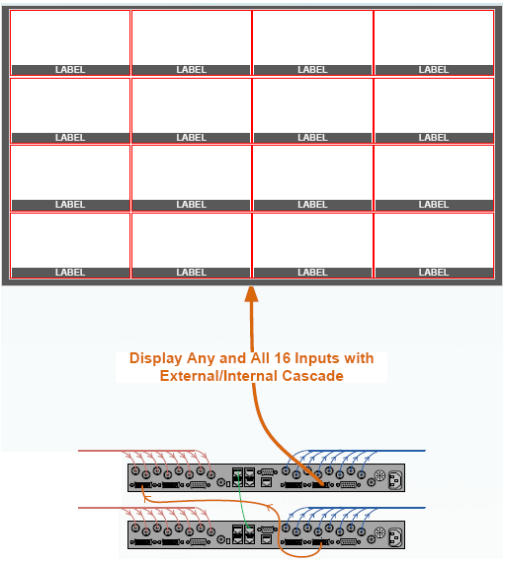
* CV stands for PAL / NTSC signal

One Rainier 3G with redundant display (monitor display failure back-up scheme)

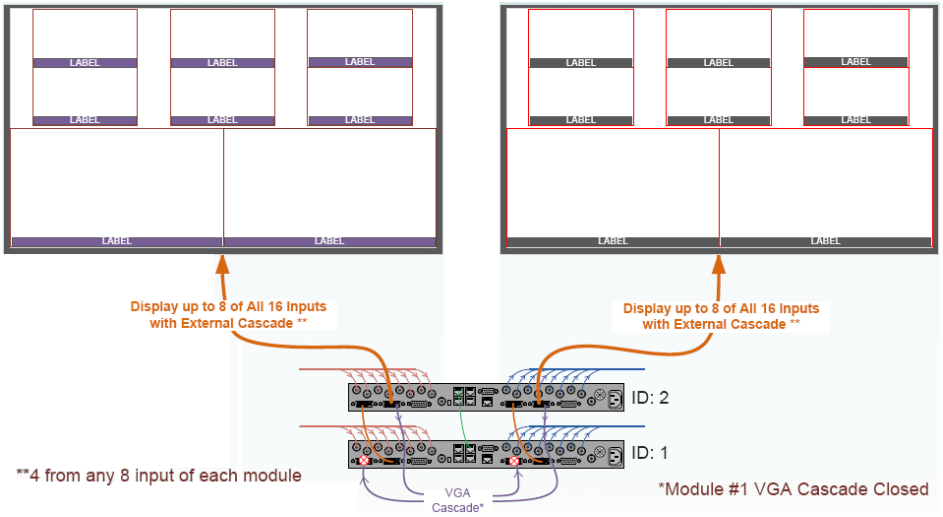

LABEL
Display Any and All 8 Inputs with Internal Cascade
Internal Bilateral Cascading
Display Any and All 8 Inputs with Internal Cascade
8x8 Crosspoint Switch
8 HD(3G/1.5G)/SD-SDI/CV Sources
8 HD(3G/1.5G)/SD-SDI Loop Outs
2 HD(3G)-SDI Multiview Outs

* CV stands for PAL / NTSC signal

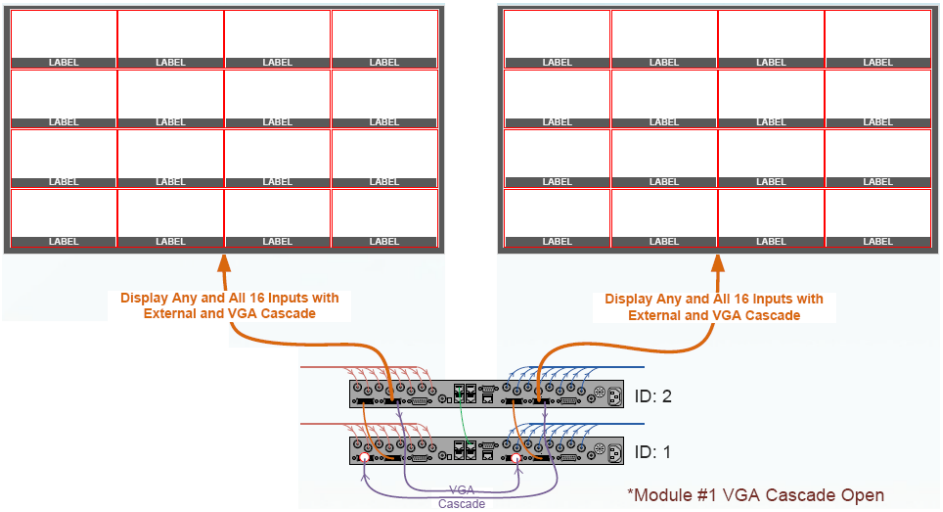
Two Rainier 3Gs connected to a dedicated monitor display



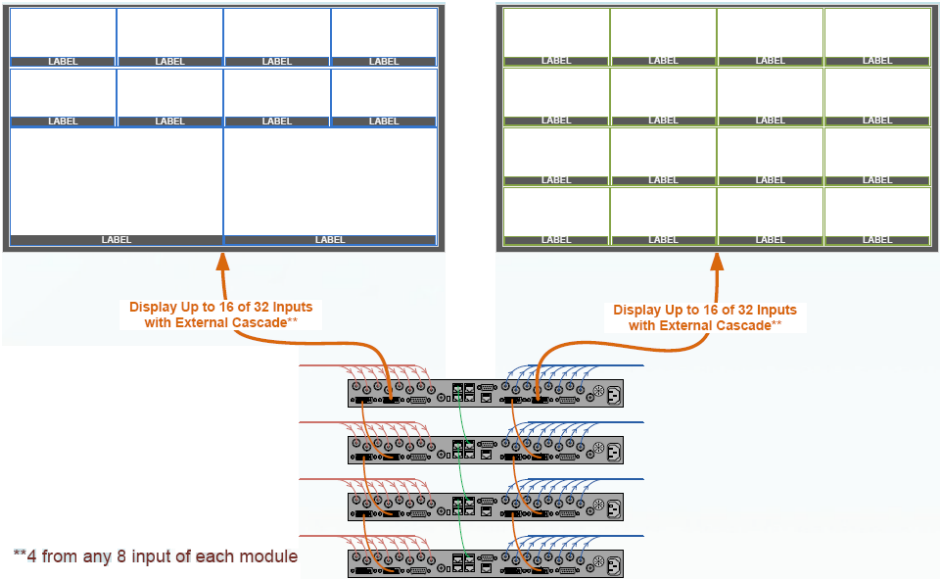
Two Rainier 3Gs connected to two monitor displays


LABEL
Display up to 8 of All 16 Inputs with External Cascade **
Display up to 8 of All 16 Inputs with External Cascade **
ID: 2
ID: 1
**4 from any 8 input of each module
VGA Cascade*
*Module #1 VGA Cascade Closed

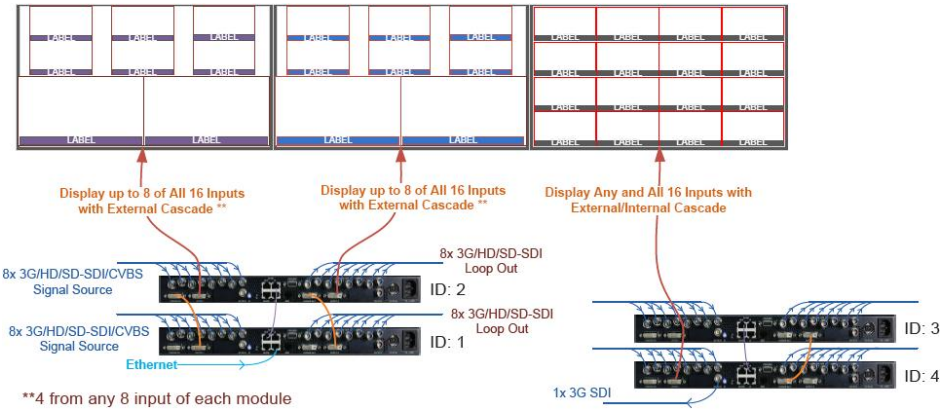
Two Rainier 3Gs with redundant display (VGA cascade, monitor display failure back-up scheme)


LABEL
Display Any and All 16 Inputs with External and VGA Cascade
Display Any and All 16 Inputs with External and VGA Cascade
ID: 2
ID: 1
VGA Cascade
*Module #1 VGA Cascade Open

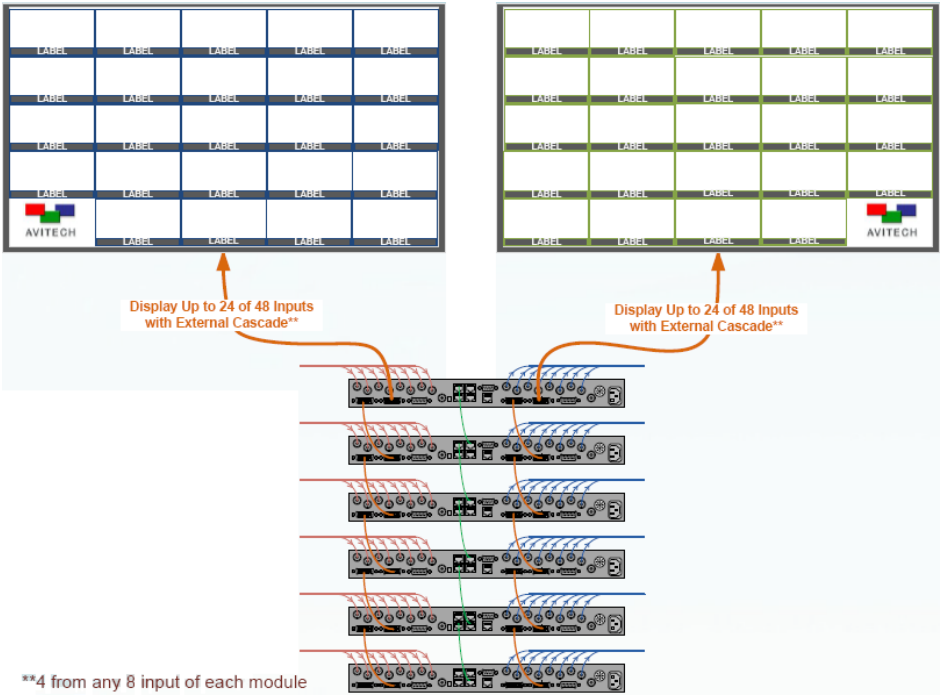
Four Rainier 3Gs connected to two monitor displays


LABEL
Display Up to 16 of 32 Inputs with External Cascade**
Display Up to 16 of 32 Inputs with External Cascade**
**4 from any 8 input of each module

Four Rainier 3Gs connected to three monitor displays


LABEL
Display up to 8 of All 16 Inputs with External Cascade **
Display up to 8 of All 16 Inputs with External Cascade **
Display Any and All 16 Inputs with External/Internal Cascade
8x 3G/HD/SD-SDI/CVBS Signal Source
8x 3G/HD/SD-SDI Loop Out
ID: 2
8x 3G/HD/SD-SDI/CVBS Signal Source
8x 3G/HD/SD-SDI Loop Out
ID: 1
Ethernet
ID: 3
ID: 4
1x 3G SDI
**4 from any 8 input of each module

Six Rainier 3Gs connected to two monitor displays


Display Up to 24 of 48 Inputs with External Cascade**
Display Up to 24 of 48 Inputs with External Cascade**
**4 from any 8 input of each module

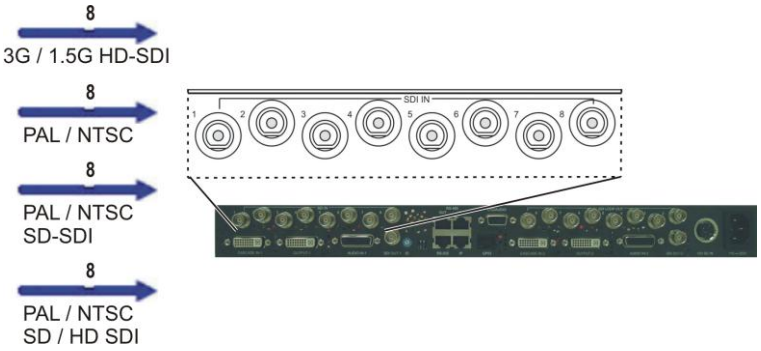
1.6 Getting Your Rainier 3G Ready for Use

Basic Hardware Connections

Perform the following steps to get your Rainier 3G series up and running:

> **NOTE:** The steps outlined next would depend on the type of configuration you wish to set up.

1. Connect up to eight BNC cables to the eight video **SDI IN 1** / **2** / **3** / **4** / **5** / **6** / **7** / **8** ports for:
   – 3G HD-SDI video inputs or;
   – 1.5G HD-SDI video inputs or;
   – SD-SDI video inputs or;
   – composite video inputs.

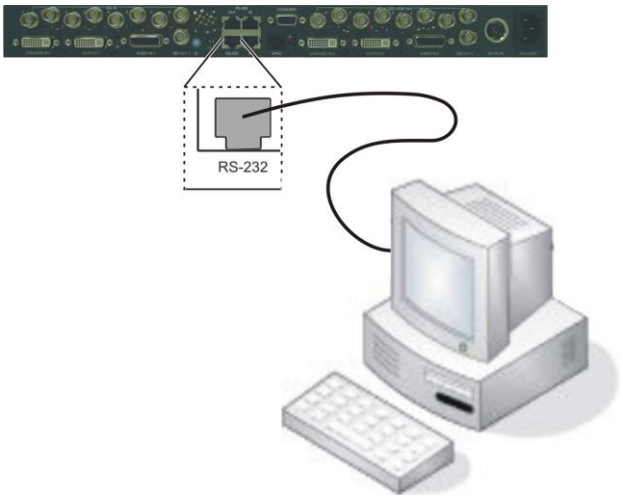


Optimum Display Performance

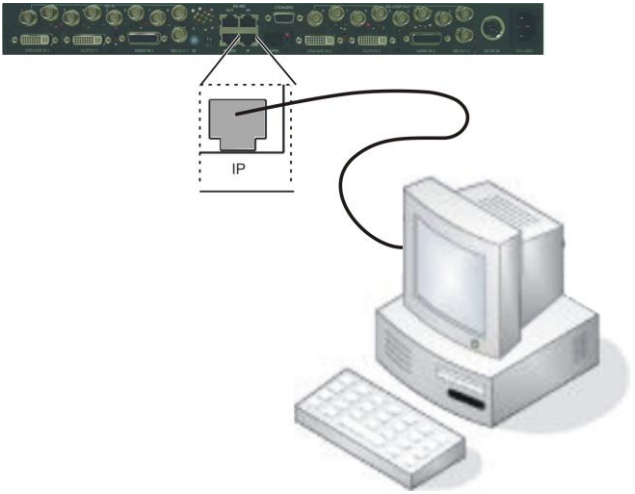
In order to ensure the display quality of your Rainier 3G, the following guidelines are recommended to be followed:

- For purely 3G / 1.5G HD / SD-SDI / PAL / NTSC input signals – connect to the **SDI IN 1** / **3** / **5** / **7** ports.
- For 3G / 1.5G HD-SDI plus PAL / NTSC input signals – connect the 3G / 1.5G HD-SDI input to the **SDI IN 1** / **3** / **5** / **7** ports and connect the PAL / NTSC input to the **SDI IN 2** / **4** / **6** / **8** ports.

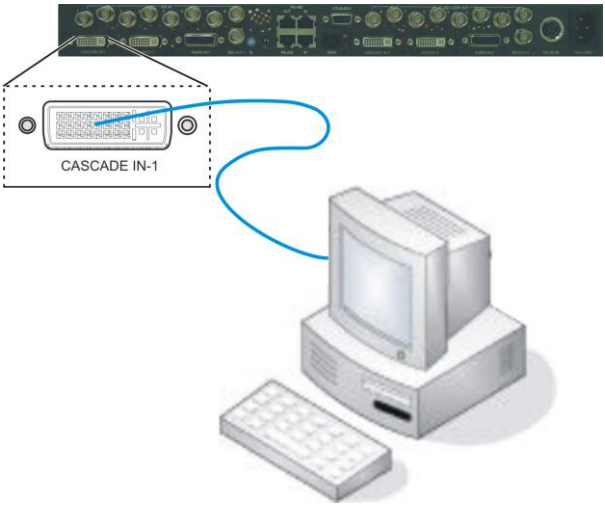
2. Connect the proprietary RJ-45 to RS-232 (DB9-FM) cable to the **RS-232** port for signal from the computer.



And / or, connect the Ethernet cable to the **IP** port for using the computer's Phoenix-Q software to perform setup on the Rainier 3G.



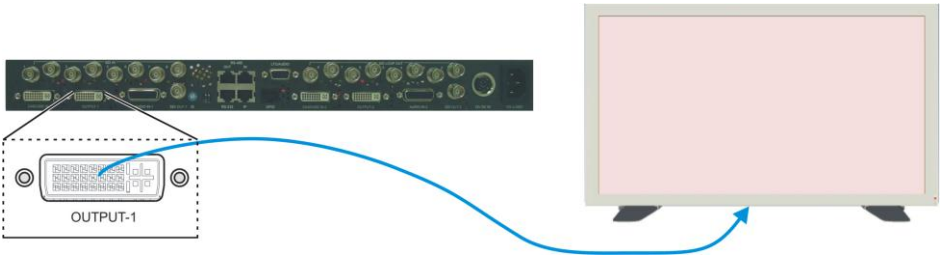
3. Connect one end of the DVI / VGA cable to the computer's DVI port and the other end to the **CASCADE IN-1** port of Rainier 3G for video input of computer signal (as background image). You may need to use a DVI-to-VGA adapter.



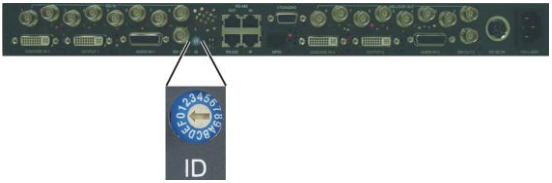
NOTE:

- Make sure that the resolution of the input source (as background image) is the same as the resolution of the **OUTPUT-1** port for video output to the monitor display.
- When connecting to the computer with NVIDIA™ display card use the DVI-to-VGA adapter that came with the NVIDIA™ display card instead of the included Avitech DVI-to-VGA adapter.
- HDCP-compliant content is not supported for **CASCADE IN** ports of Rainier 3G.

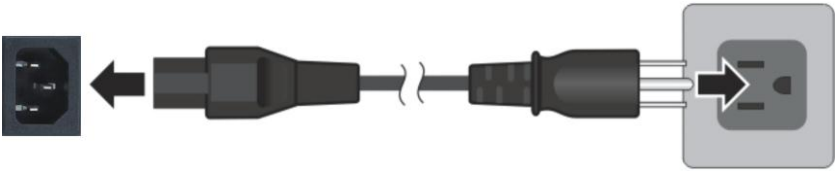
4. Connect the DVI-I cable to the **OUTPUT-1** port for video output to the monitor display (you may need to use a DVI-to-VGA adapter for monitor display with VGA input).



5. Make sure to assign a unique address to your Rainier 3G **ID** rotary dial when connecting to systems with two or more units.



6. Connect the AC power cord to the **110~250V** power jack.



Cascading

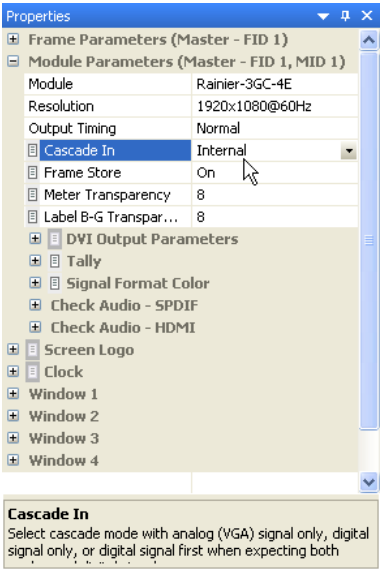
In essence, except for the Rainier 3G-4E / -4A / -4D, your Rainier 3G / -3GL / -3GC / -3GLC (-4E/4E / -4A/4A / -4D/4D / -4A/4E / -4A/4D / -4E/4D) is an internally cascaded dual module.

Cascading is the technique of "daisy-chaining" two or more Rainier 3G modules through a DVI display and a digital control backbone. This connection allows the combined modules to operate as a single integrated system. Up to eight different modules can be combined in this fashion to create extremely large and complex systems with the ability to simultaneously monitor audio, video, and computer signals on the same display. If a module should fail, then the control and video information is passed through to allow the continued operation of the system.

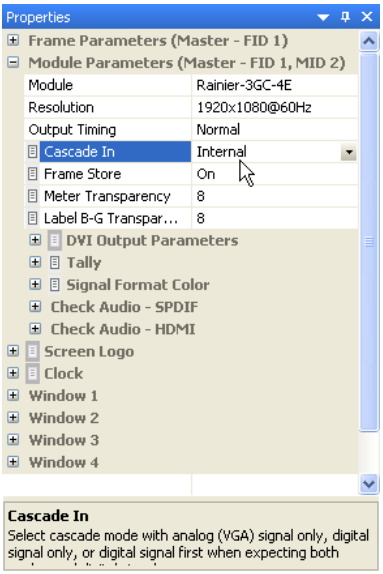
Internal Cascading (Dual Module Rainier 3G)

When cascading internally:

- **Scenario 1** – when **OUTPUT-1** port connects to your monitor display. Make sure that the **Cascade In** setting for **M**odule **ID 1** (**MID 1**) in your Phoenix-Q program is set to **Internal**.

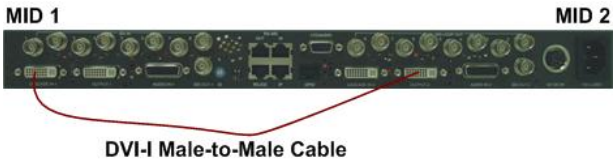


- **Scenario 2** – when **OUTPUT-2** port connects to your monitor display. Make sure that the **Cascade In** setting for **M**odule **ID 2** (**MID 2**) in your Phoenix-Q program is set to **Internal**.

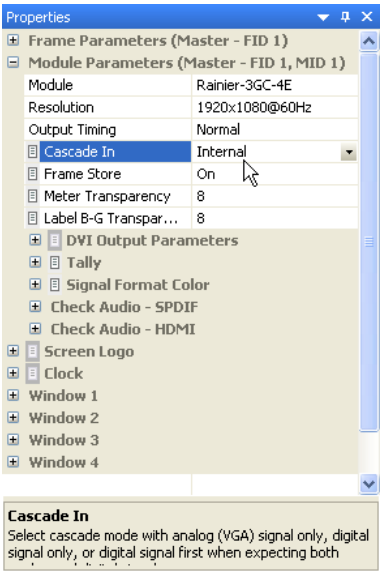


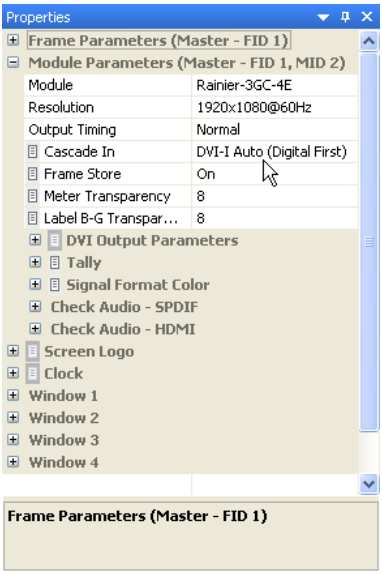
In case you wish to connect a DVI-I male-to-male cable between as a way of cascading the two modules in a single Rainier 3G unit.

- **Scenario 1** – **OUTPUT-2** to **CASCADE IN-1** ports. **OUTPUT-1** port connects to the monitor display.



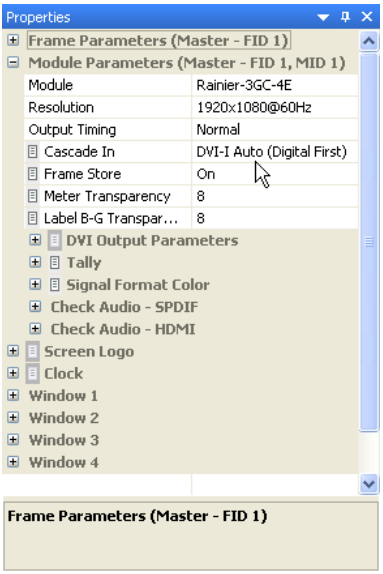
Then make sure that the **Cascade In** setting for **M**odule **ID 1** (**MID 1**) in your Phoenix-Q program is set to **Internal**; and the **Cascade In** setting **M**odule **ID 2** (**MID 2**) in your Phoenix-Q program is set to **DVI-I Auto (Digital First)**.

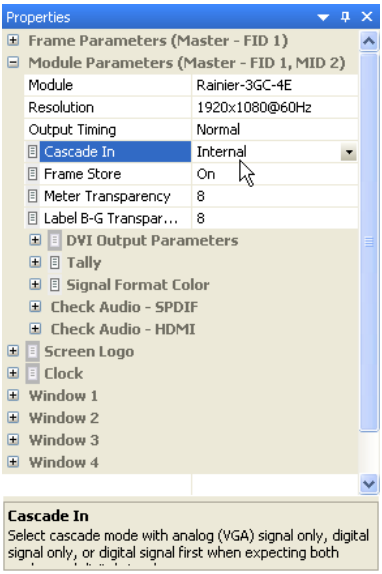




- **Scenario 2** – **OUTPUT 1** to **CASCADE IN-2** ports. **OUTPUT-2** port connects to the monitor display.

Then make sure that the **Cascade In** setting for **M**odule **ID 1** (**MID 1**) in your Phoenix-Q program is set to **DVI-I Auto (Digital First)**; and the **Cascade In** setting **M**odule **ID 2** (**MID 2**) in your Phoenix-Q program is set to **Internal**.

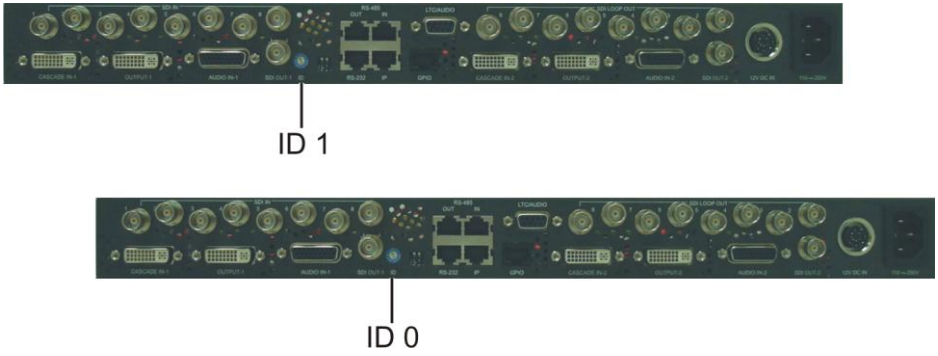




Cascading Two or More Rainier 3G (External)

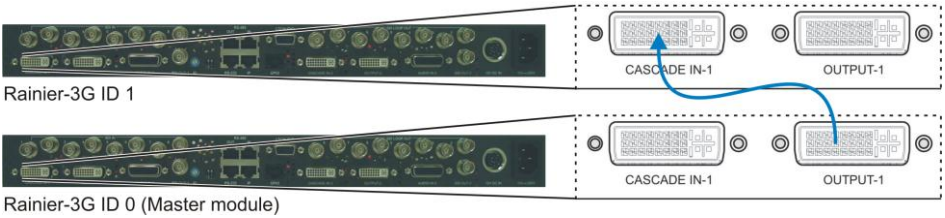
To cascade two or more Avitech Rainier 3G, perform the following steps:

1. Set the rotary **ID** on the first Avitech Rainier 3G to **0** and set the rotary **ID** on the second Rainier 3G to **1**, and so forth (can be other values as long as both are different from each other's setting).

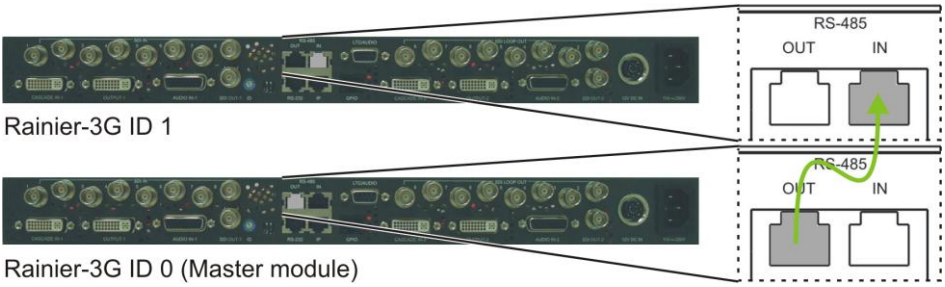


IMPORTANT: When cascading two or more modules (up to eight maximum) make sure each module gets assigned a unique rotary ID or it will cause input conflicts.

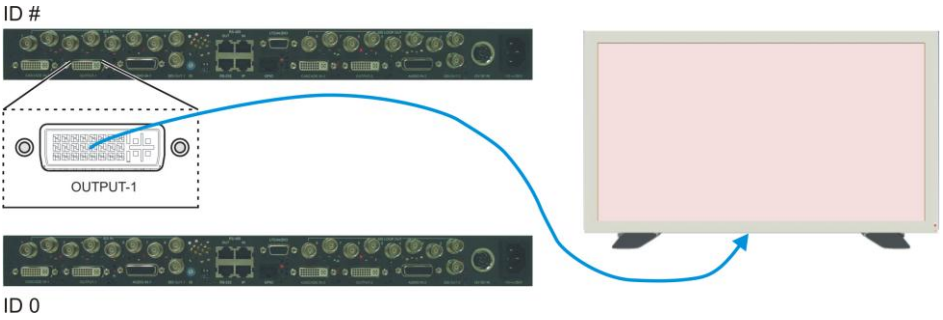
2. To display video overlay from each module all units must be connected to each other via male-to-male short DVI cascading cable. Take a DVI cascading cable and connect one end to the **OUTPUT-1 / -2** port on the Master (first) module (N) and the other end to the **CASCADE IN-1 / -2** port of the next module in the chain (N+1).



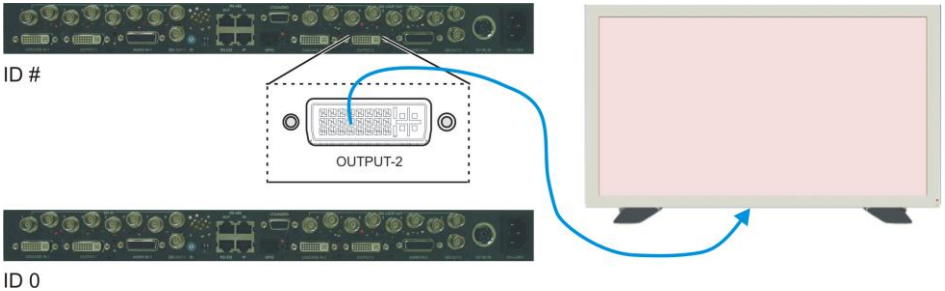
3. The Rainier 3G is cascaded through RJ-45 (RS-485) which is used to loop communication from one Rainier 3G to the next. The data stream carries control and configuration information. Take the RS-485 cascading cable and connect one end to the **RS-485 OUT** of the Master (first) Rainier 3G (N) and the other end to **RS-485 IN** of the next Rainier 3G up (N+1). Refer to the sample combination as follows:



4. Connect one end of the DVI cable to **OUTPUT-1** / **2** port of the last Rainier 3G cascaded and the other end to the monitor display (you may need to use a DVI to VGA adapter for monitor display with VGA input).

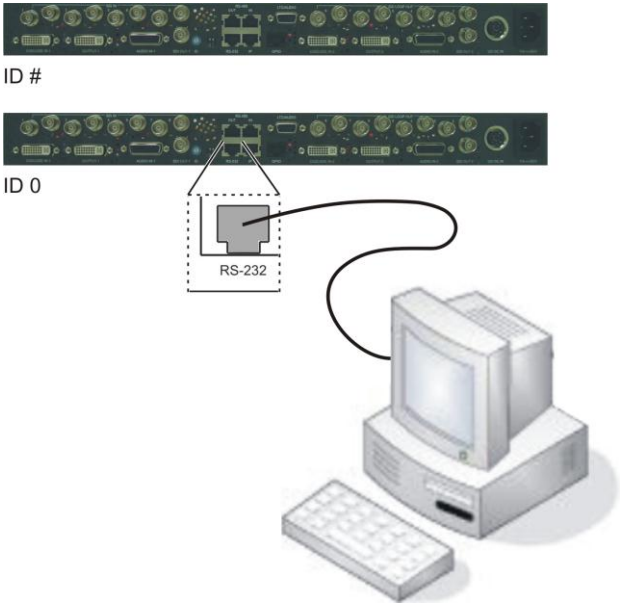


or

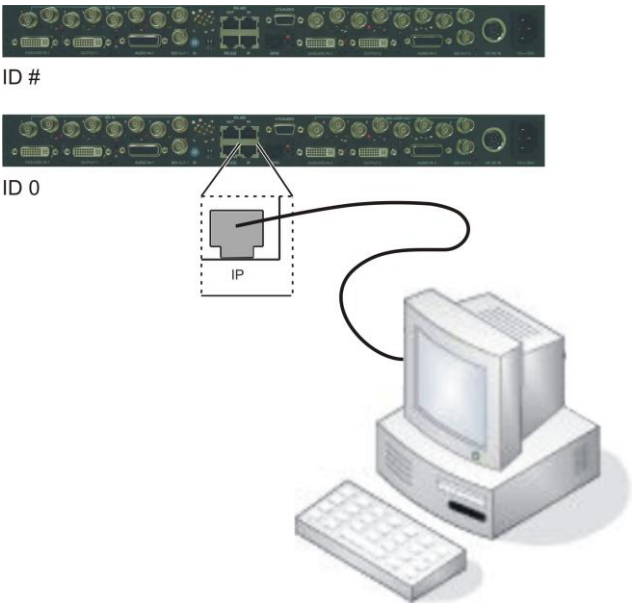


NOTE: The analog part of the **CASCADE IN-1 / 2** port is bypassed (relays) in case the Rainier 3G has no power or is defective. A powered down or a defective unit in the chain will not compromise the whole system, other Rainier 3G in the chain will display properly.

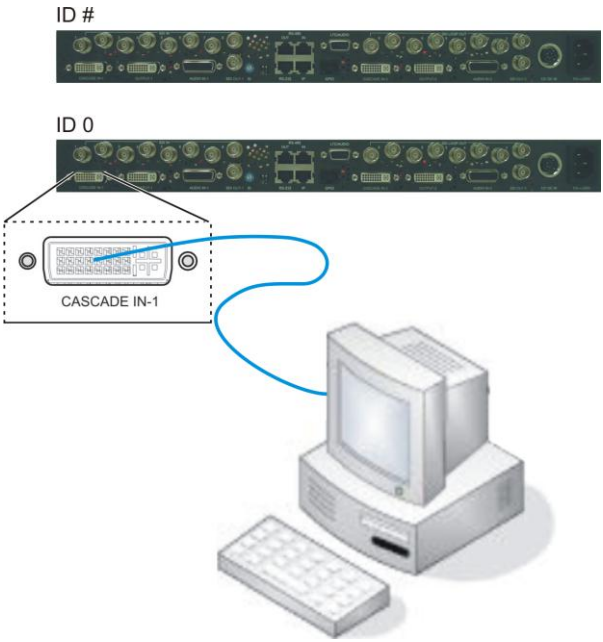
5. Connect one end of the proprietary RJ-45 to RS-232 (DB9-FM) cable to the computer's RS-232 port and the other end to the **RS-232** port of Rainier 3G ID 0 (Master).



Or, connect the Ethernet cable between the Rainier 3G ID 0 (Master) **IP** port to the computer's RJ-45 port.



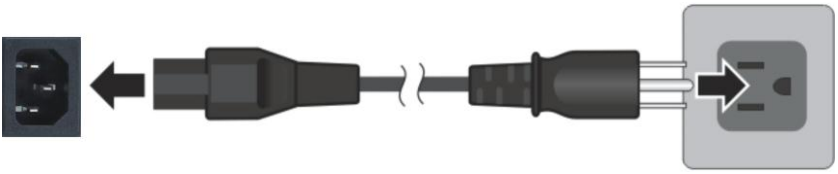
6. Connect one end of the DVI / VGA cable to the computer's DVI port and the other end to the **CASCADE IN-1** port of Rainier 3G for video input of computer signal (as background image). You may need to use a DVI-to-VGA adapter.



NOTE:

- Make sure that the resolution of the input source (as background image) is the same as the resolution of the **OUTPUT-1** / **2** port for video output to the monitor display.
- When connecting to the computer with NVIDIA™ display card use the DVI-to-VGA adapter that came with the NVIDIA™ display card instead of the included Avitech DVI-to-VGA adapter.
- HDCP-compliant content is not supported for **CASCADE IN-1** / **2** port of Rainier 3G.

7. Connect the power cables to the Avitech multiviewer and make sure that power is available.



1.7 Using the Phoenix-Q Configuration Software

The Phoenix-Q configuration software is designed for all Avitech multiviewers. This program requires no installation and should not be run from a "read-only" device, such as an optical disc. This section introduces the Phoenix-Q software for setting up your system.

> **NOTE:** Make sure the Rainier 3G is powered on and connected properly to your computer before launching the Phoenix-Q software.

Connection Methods

There are two ways your Rainier 3G can connect to the controlling computer:

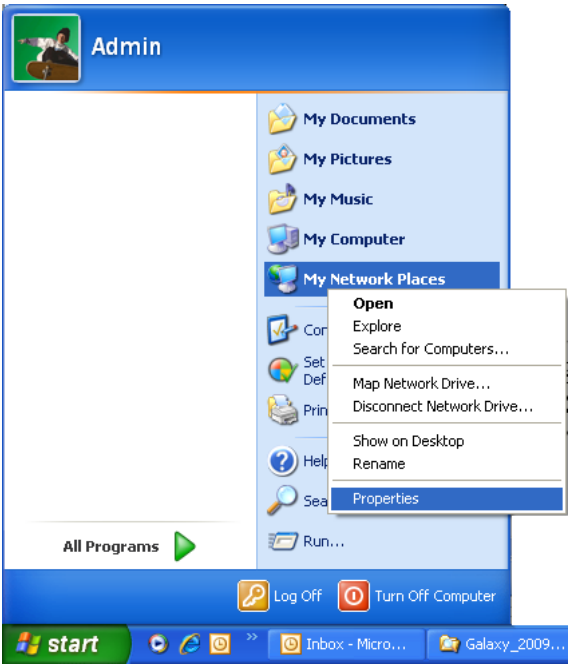
- Use the Ethernet cable (IP address) to connect (refer to the next section "Setting Up Static IP").
- Use the serial cable to connect (refer to a later section "Setting Up COM Port").

Setting Up Static IP

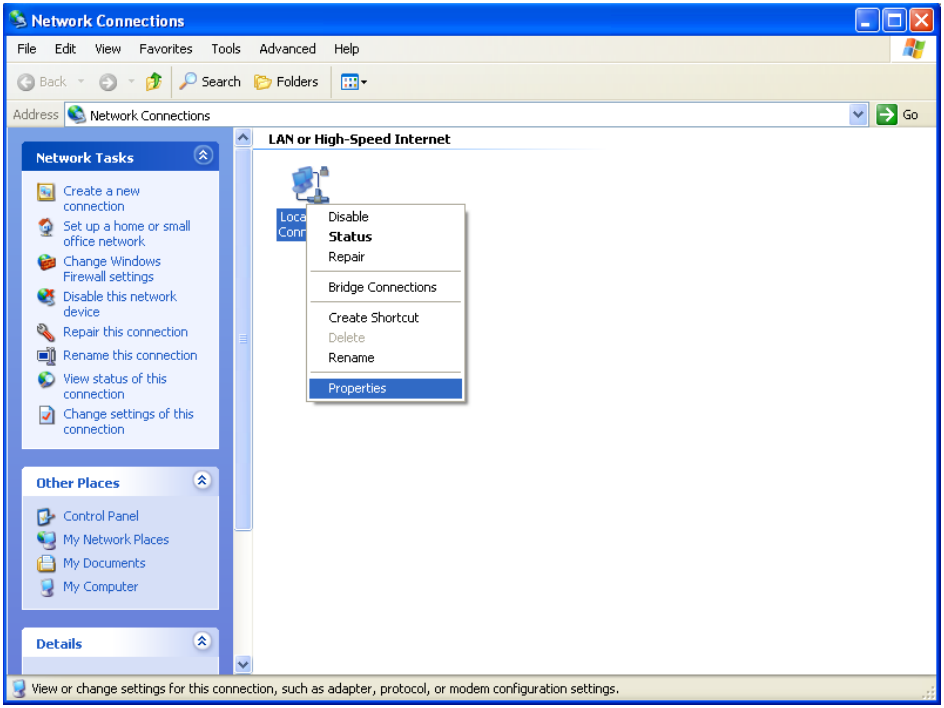
Before connecting the computers / controllers network to the Rainier 3G computers with DHCP LAN connection will need to be changed to static IP, similar range as the Rainier 3G (e.g., "192.168.0.5" – factory-default setting). Or, change the IP address of the Rainier 3G Master unit to a similar range as the controlling computer.

Method 1: Change the IP Address of the Controlling Computer

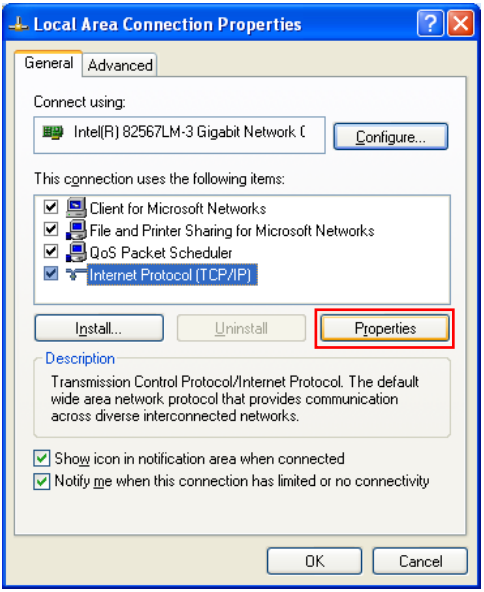
1. On your computer click **Start**, and then right-click the mouse on **My Network Places**, and click **Properties**.



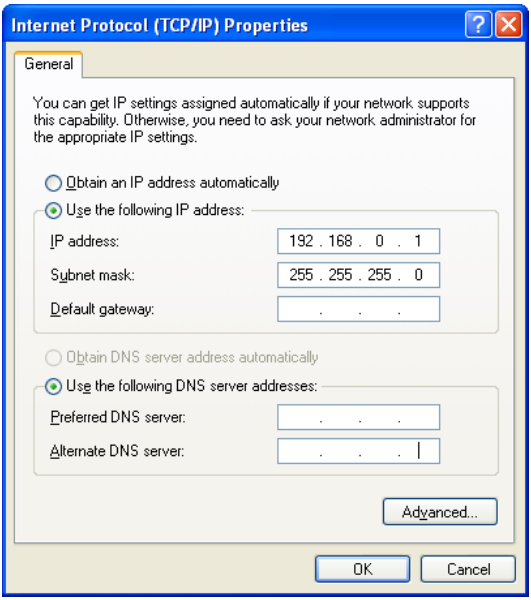
2. When the next screen appears right-click the **Local Area Connection** icon and click **Properties**.



3. When the next screen appears click to highlight **Internet Protocol (TCP/IP)**, and click **Properties**.



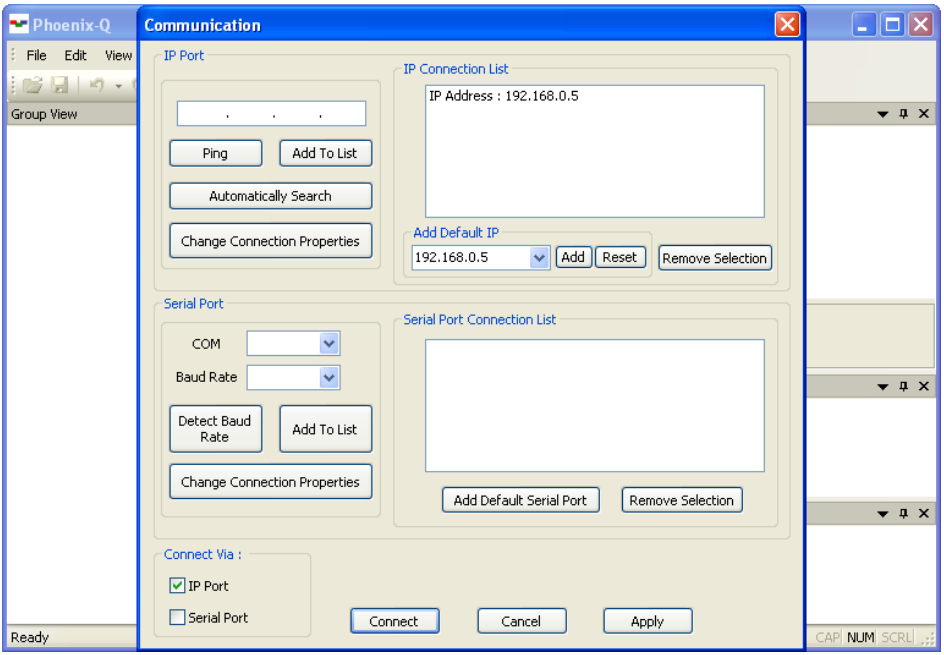
4. When the next screen appears click the radio button to select **Use the following IP address:**, and then enter the **IP address: 192 . 168 . 0 . x** (where **x** is any value from **1** – **4** or **6** – **253**), and **Subnet mask: 255 . 255 . 255. 0**.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 0 . 1
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

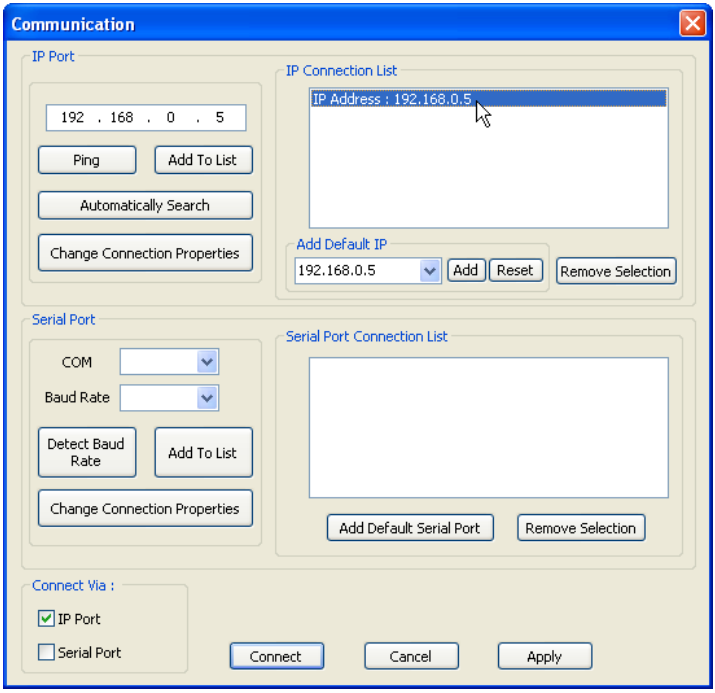
5. Click **OK** to exit.

Method 2: Change the IP Address of the Rainier 3G Master Unit

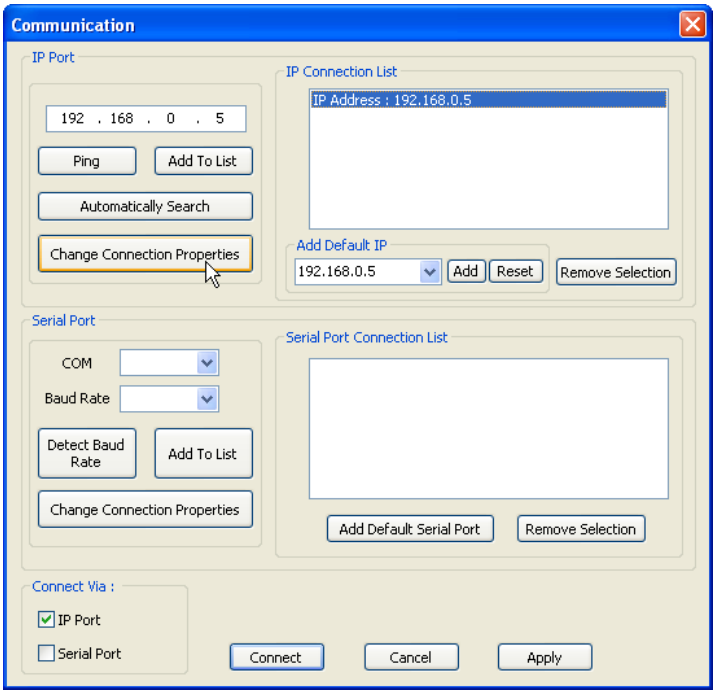
1. Run the Phoenix-Q software by double-clicking the "Phoenix-Q.exe" file (located in the included utility disc) and the following screen will appear.



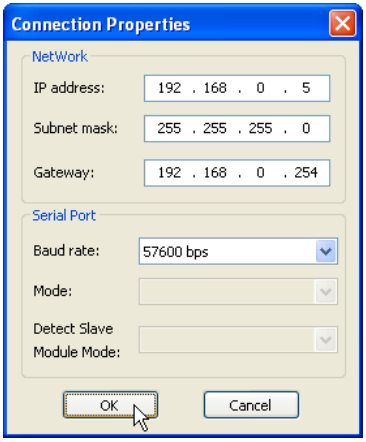
2. Change the IP address by first clicking the default **IP Address: 192.168.0.5** entry in the **IP Connection List** window.



3. Click the **Change Connection Properties** button.



4. When the **Connection Properties** window appears enter the new **IP address**, **Subnet mask**, and **Gateway**. Then click **OK** to exit.

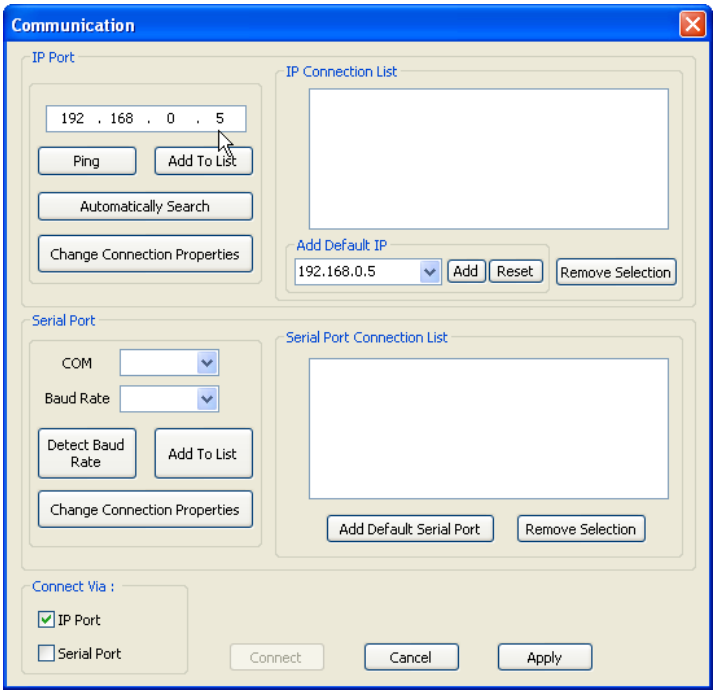


5. Click **OK** when the next screen appears.

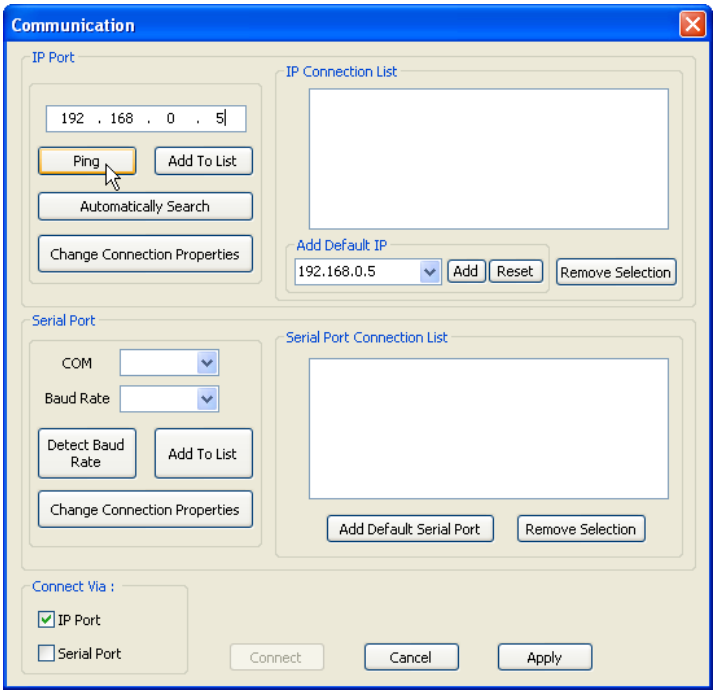
Pinging the Rainier 3G

If you decide to use the Ethernet cable to connect make sure you can ping the unit at “192.168.0.5” (factory-default IP address).

1. Enter the factory-default IP address “192.168.0.5” in the window.



2. Click **Ping** on the **Communication** window.

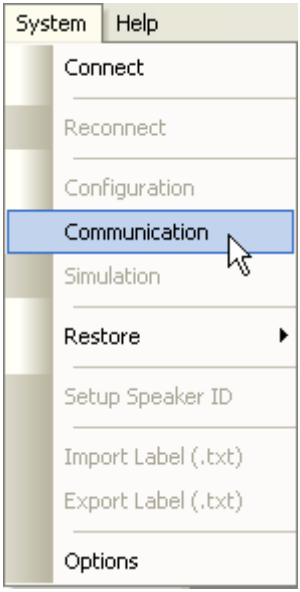


3. The following window will appear to signify a successful communication. Click **OK** to exit.

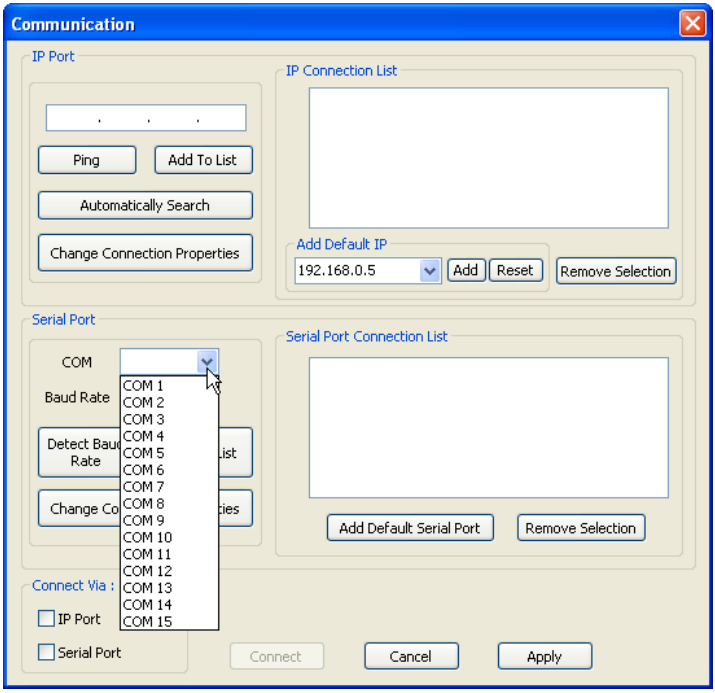
Setting Up COM Port

If you use the serial cable to connect configure your computer's COM port to be **1 – 15**. Perform the following steps to specify COM port communication:

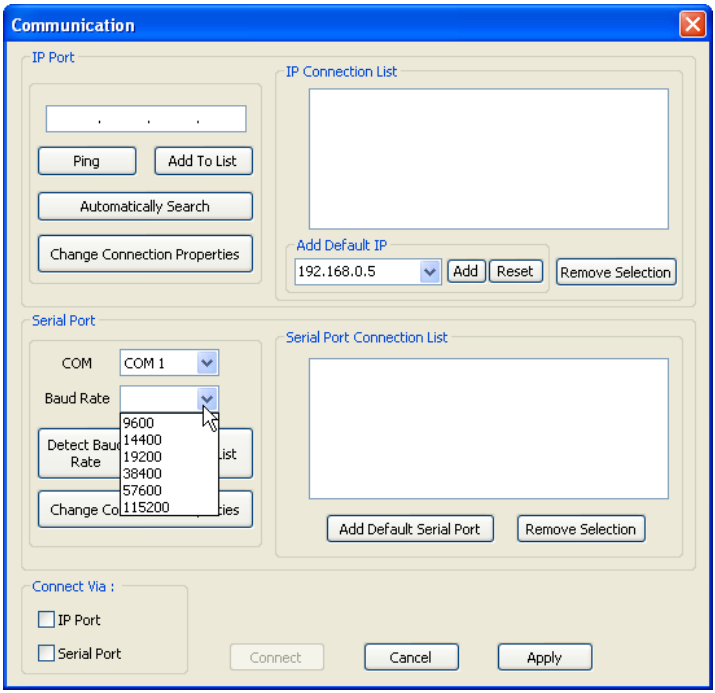
1. Upon starting up the Phoenix-Q configuration software click **System→ Communication**.



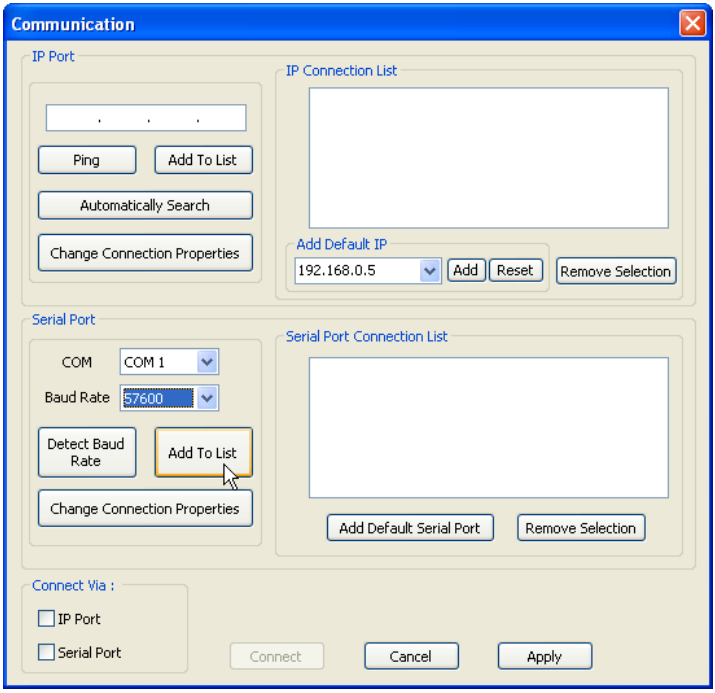
2. Make sure to specify the same **COM** port setting as your controlling computer.



3. Next, select the desired **Baud Rate**.



4. Then, click **Add to List** to allow the newly configured serial port to appear on the **Serial Port Connection List** window.

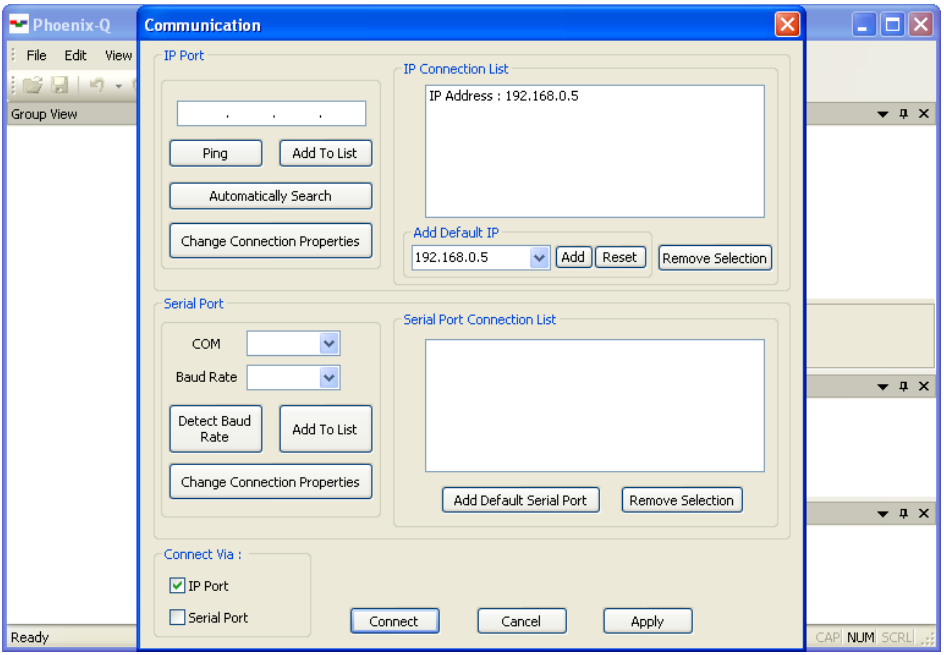


5. Click **Apply**, and then **Cancel** to exit.

Starting Up the Phoenix-Q Configuration Software

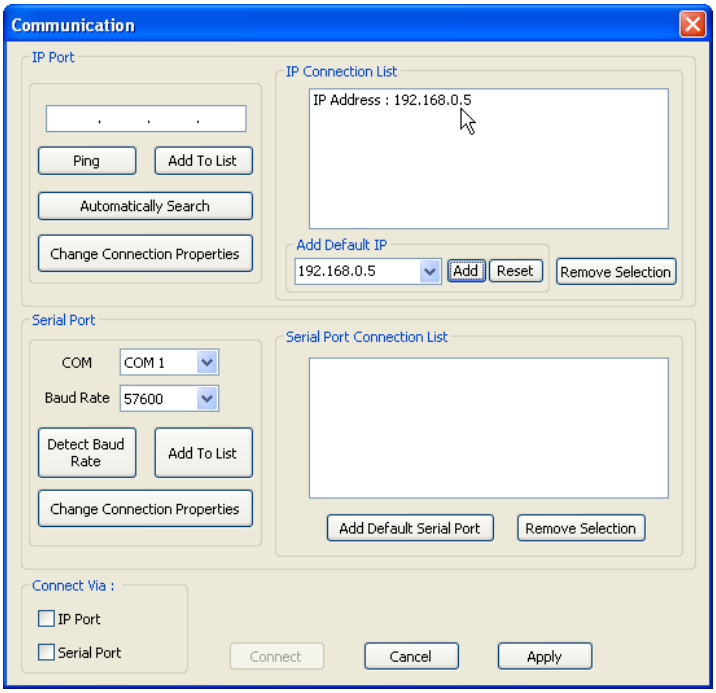
To optimize the usage of your Avitech Rainier 3G perform the following steps to configure it using the Phoenix-Q configuration software:

1. Run the Phoenix-Q software by double-clicking the “Phoenix-Q.exe” file (located in the included utility disc) and the following screen will appear.

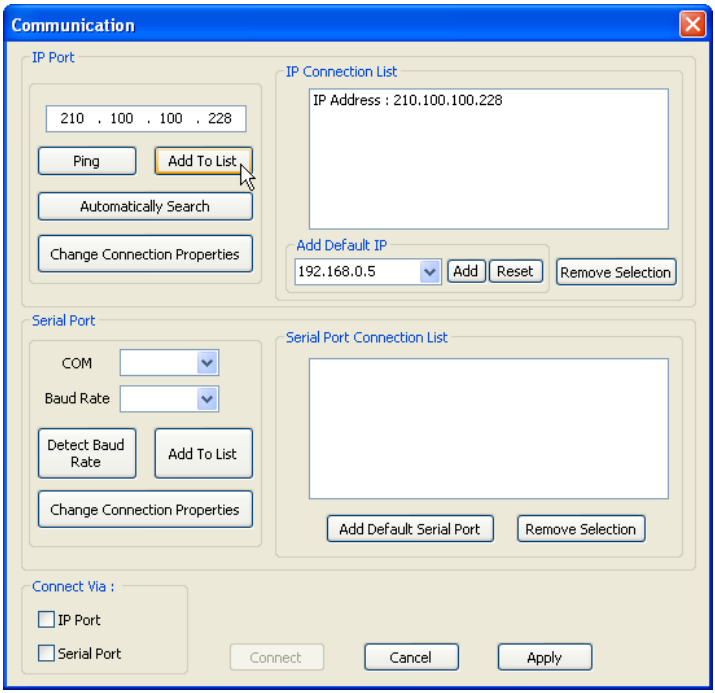


2. For Ethernet communication set the IP address using any of the below two (2) methods:
   Method 1 – using the default IP address (e.g., 192.168.0.5).

> **NOTE:** Click **Add** to allow **IP Address: 192.168.0.5** to appear in the **IP Connection List** window in case it has been removed.



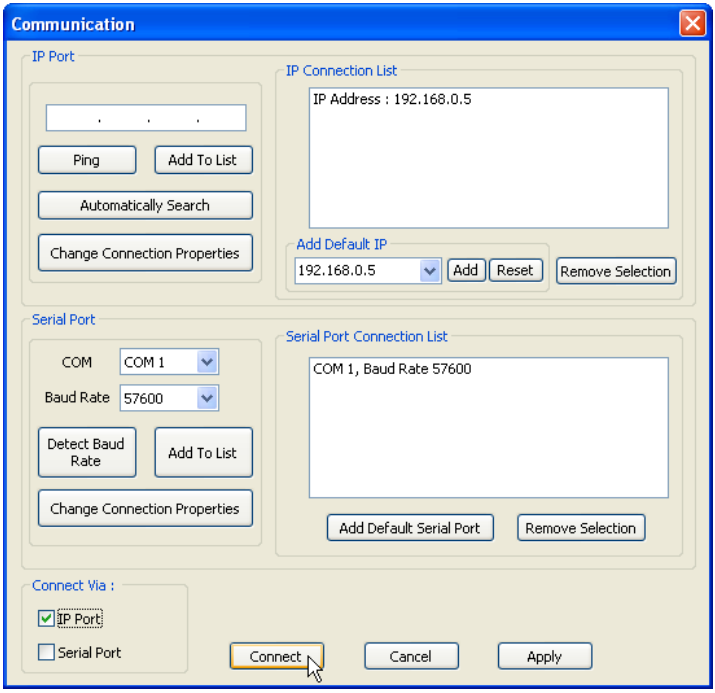
Method 2 – enter the correct IP address (e.g., 210.100.100.228) to match the value of the controlling computer. Next, click the **Add To List** button to allow the newly configured IP address to appear on the **IP Connection List** window.



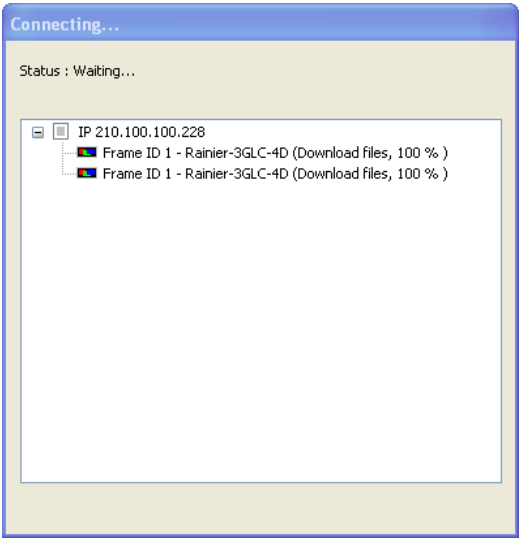
Or, when using serial communication, make sure to specify the correct **COM** and **Baud Rate** setting (see a previous section) then click the **Add To List** button to allow the newly configured serial port to appear on the **Serial Port Connection List** window.

3. Then click **Apply**.

4. Select the type of connection by clicking the **IP Port** or **Serial Port** checkbox. Then click **Connect**.



5. Your computer will start to search for your Rainier 3G(s) and the following screen will appear.

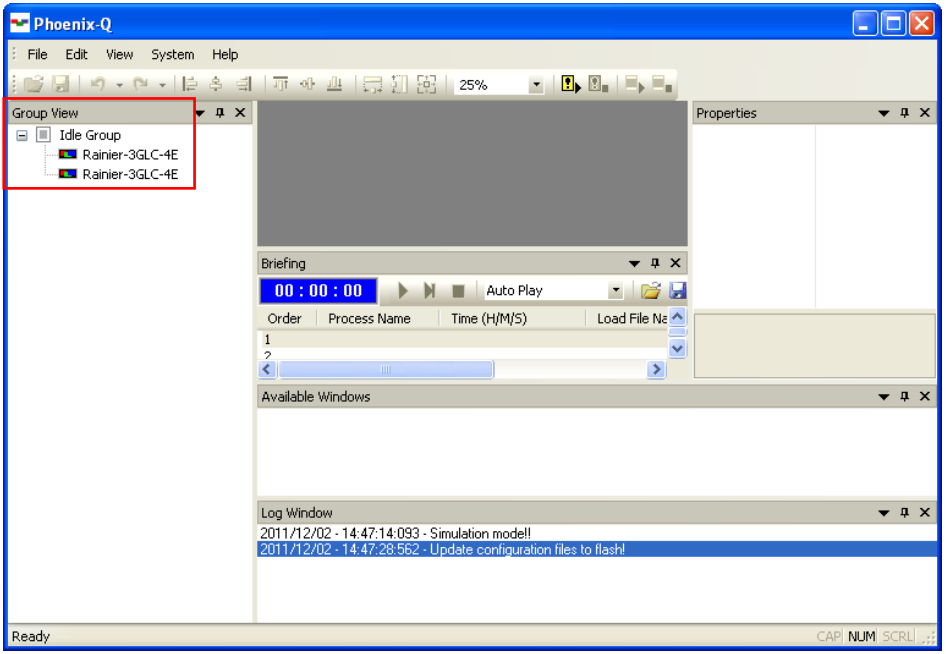

Connecting...
Status : Waiting...
IP 210.100.100.228
Frame ID 1 - Rainier-3GLC-4D (Download files, 100 %)
Frame ID 1 - Rainier-3GLC-4D (Download files, 100 %)

NOTE: Make sure the cascaded Rainier 3G have different rotary ID settings (e.g., **1** – **2** – **3**) on their rear panels.

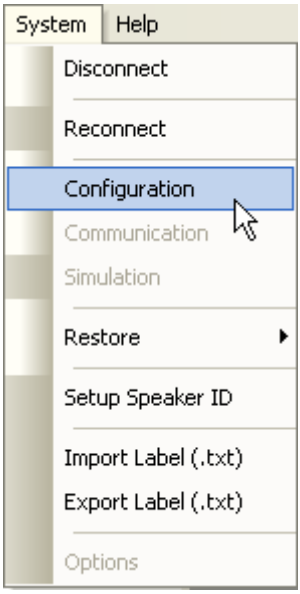
The **Group View** window will list the module(s) found and will initially be listed under **Idle Group**.

NOTE:

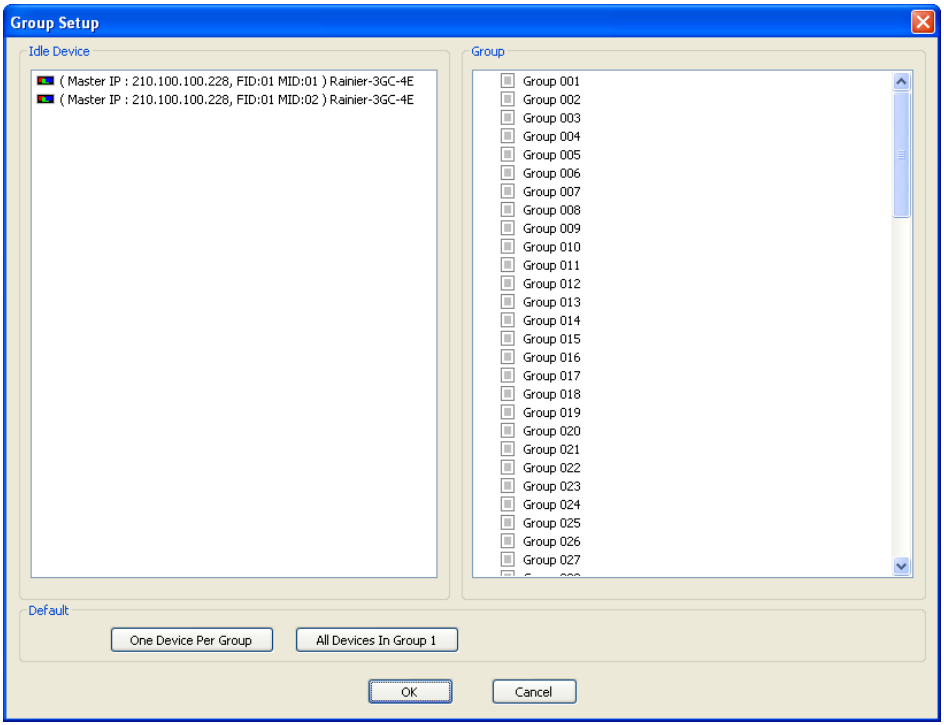
- If you have two or more modules cascaded they should also be detected.
- Make sure that the slave unit's baud rate and resolution is the same as the master unit.



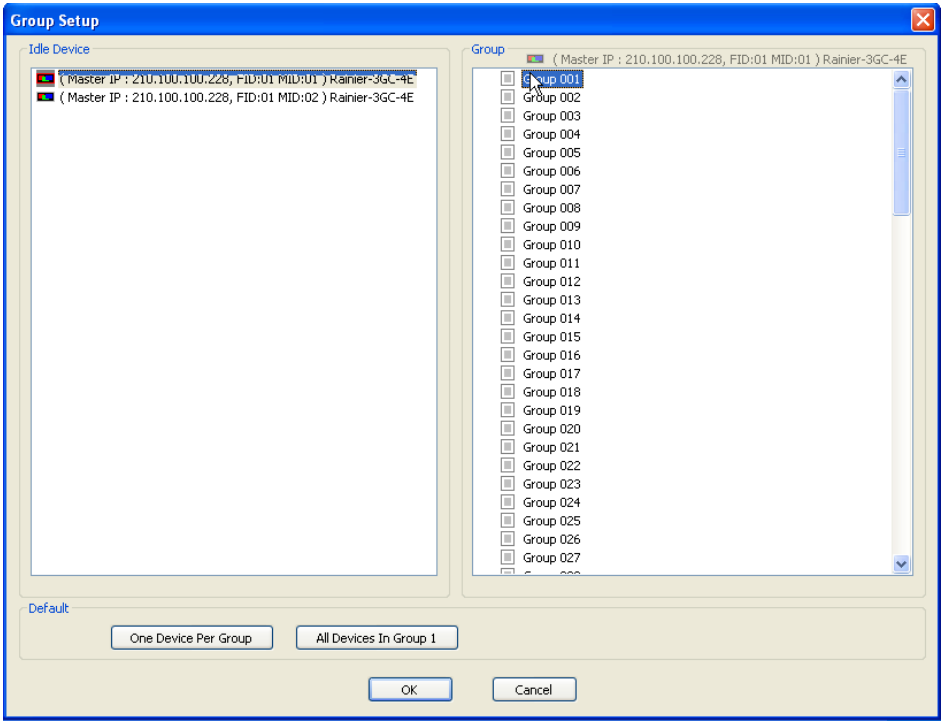
6. Click **System→Configuration**.



The **Group Setup** window will appear.

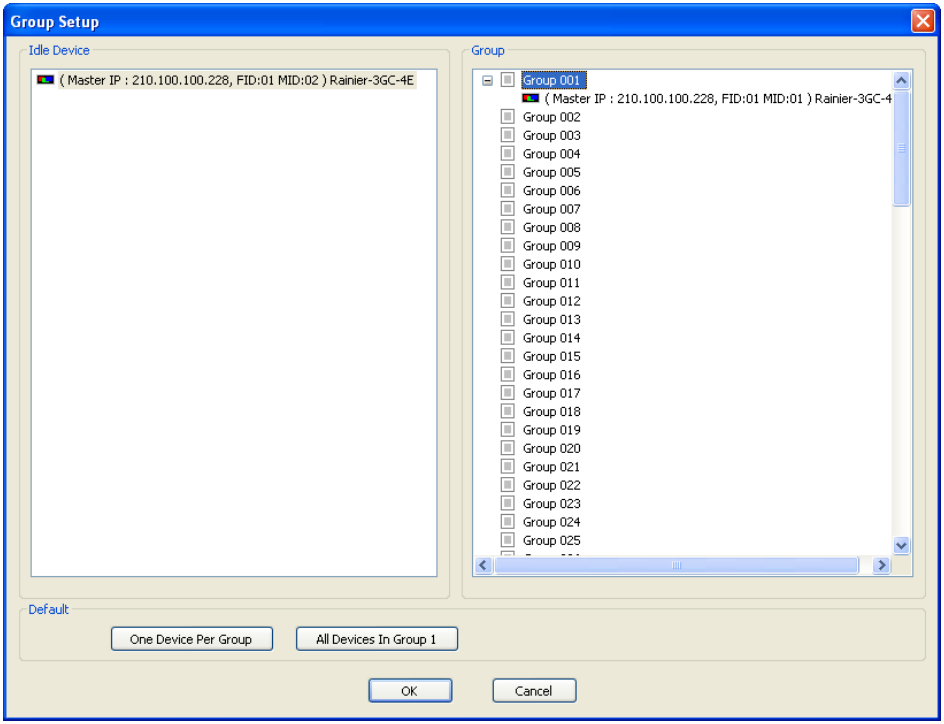


7. To assign the grouping drag the **Idle Device** on the left panel to the desired **Group #** on the right panel (e.g., **Group 001**).



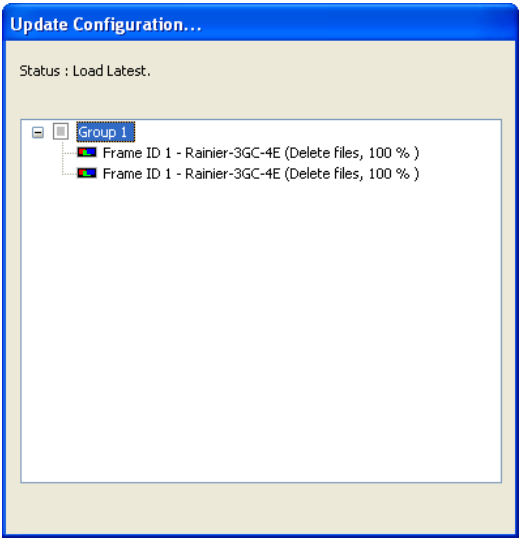
Or, click the **One Device Per Group** button to assign a device to each group or click **All Devices in Group 1** to assign all devices to belong to **Group 1**.

After dragging the module would be displayed as belonging to your assigned grouping.

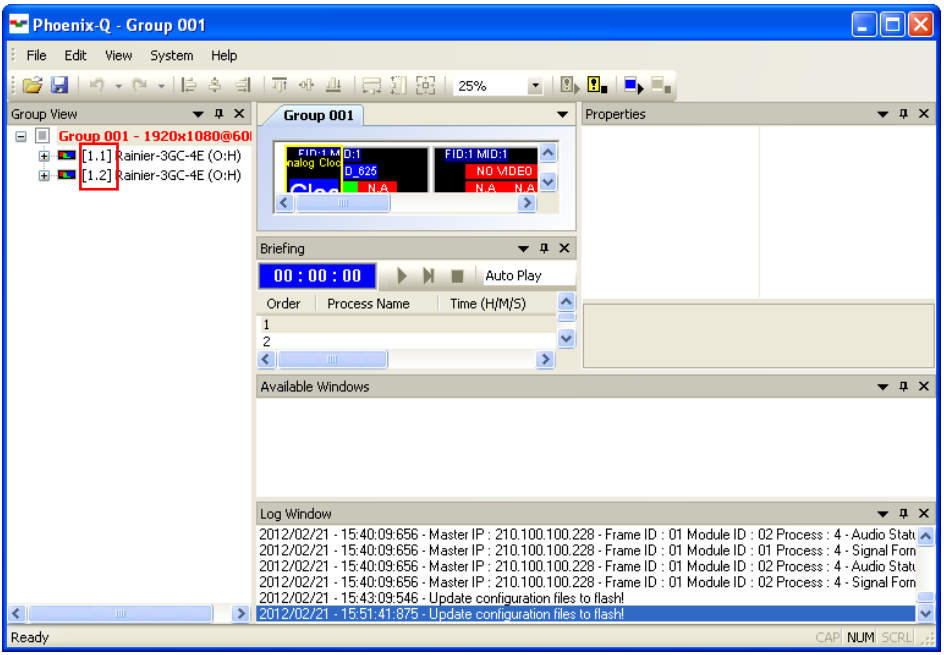


Perform the same for the other **Idle Device**(s).

8. Click **OK** to exit the **Group Setup** window. Phoenix-Q will save the configuration file “System.agi” to the device’s flash memory.

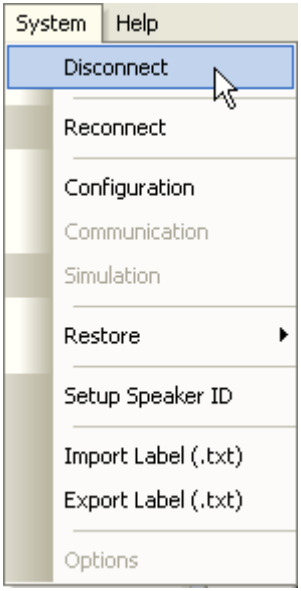

Update Configuration...
Status : Load Latest.
Group 1
Frame ID 1 - Rainier-3GC-4E (Delete files, 100 %)
Frame ID 1 - Rainier-3GC-4E (Delete files, 100 %)

The next figure shows a sample initial connection screen.


Phoenix-Q - Group 001
File
Edit
View
System
Help
25%
Group View
Group 001 - 1920x1080@60
[1.1] Rainier-3GC-4E (O:H)
[1.2] Rainier-3GC-4E (O:H)
Group 001
FID:1 MID:1
NO VIDEO
Properties
Briefing
00 : 00 : 00
Auto Play
Order
Process Name
Time (H/M/S)
Available Windows
Log Window
2012/02/21 - 15:40:09:656 - Master IP : 210.100.100.228 - Frame ID : 01 Module ID : 02 Process : 4 - Audio Stat
2012/02/21 - 15:40:09:656 - Master IP : 210.100.100.228 - Frame ID : 01 Module ID : 01 Process : 4 - Signal Form
2012/02/21 - 15:40:09:656 - Master IP : 210.100.100.228 - Frame ID : 01 Module ID : 02 Process : 4 - Audio Stat
2012/02/21 - 15:40:09:656 - Master IP : 210.100.100.228 - Frame ID : 01 Module ID : 01 Process : 4 - Signal Form
2012/02/21 - 15:43:09:546 - Update configuration files to flash!
2012/02/21 - 15:51:41:875 - Update configuration files to flash!
Ready
CAP
NUM
SCRL

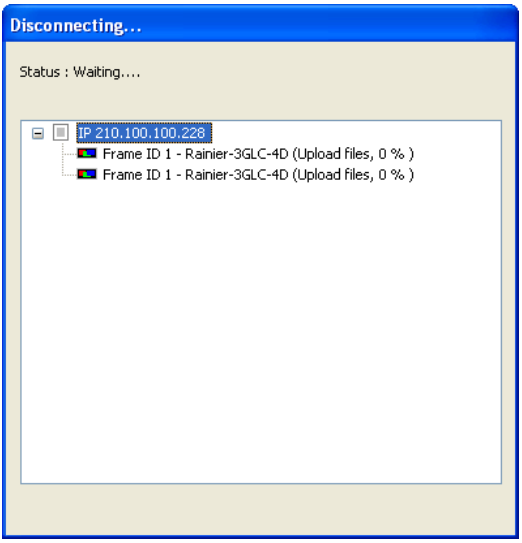
The “[1.1]” appearing before the device name signifies the frame ID and module ID number. Hence “[1.2]” would signify frame ID 1 and module 2.

9. To allow the Phoenix-Q software to get the UMD (under monitor display) data from the router (when necessary) click **System→Disconnect**.

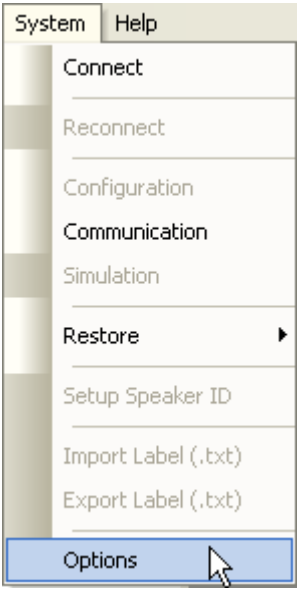


Then click **OK** to confirm system disconnection via Phoenix-Q software.

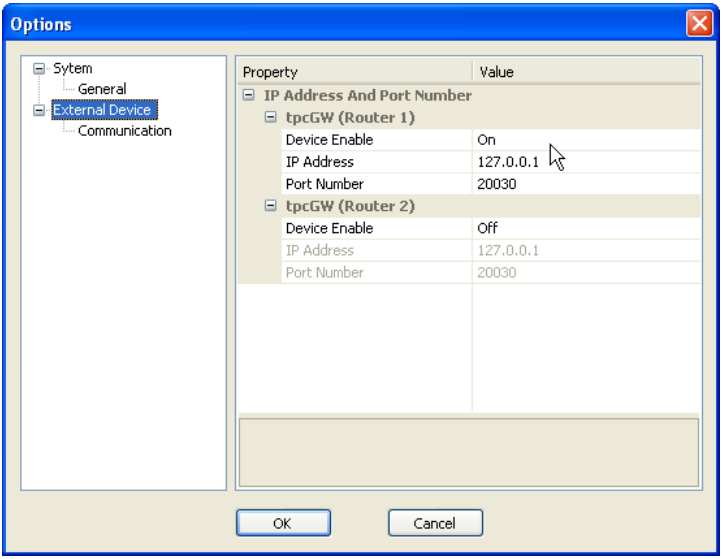
The process of disconnecting will appear onscreen.


Disconnecting...
Status : Waiting....
IP 210.100.100.228
Frame ID 1 - Rainier-3GLC-4D (Upload files, 0 %)
Frame ID 1 - Rainier-3GLC-4D (Upload files, 0 %)

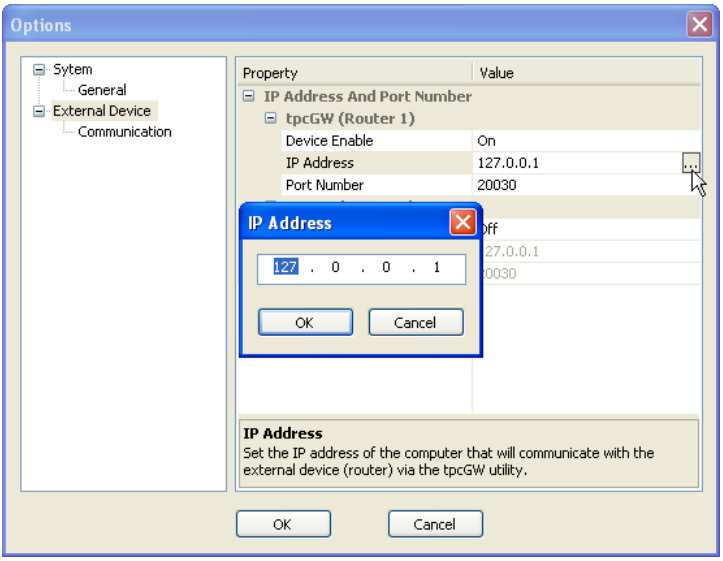
After system has completely disconnected, click **System→Options**.



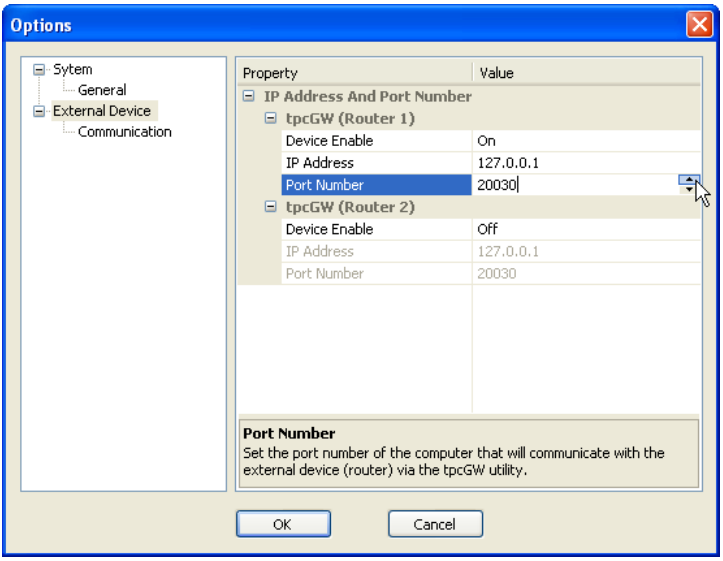
10. On the **Options** screen click **External Device** and make sure that **Device Enable** is set to **On**.



11. Make sure that the **IP Address** corresponds to the IP address of the computer running the tpcGW utility. If not, click the IP Address button "…" and when the **IP Address** screen appears, enter the correct value. Then click **OK** to exit.



12. Lastly, make sure that the **Port Number** shown is correct. If not, enter the value directly or click the up / down arrow button. Then click **OK** to exit the **Option** screen setup.



IMPORTANT: Make sure the value appearing for both **IP Address** and **Port Number** must be similar to the value entered in the tpcGW utility to be able to successfully connect to the router.

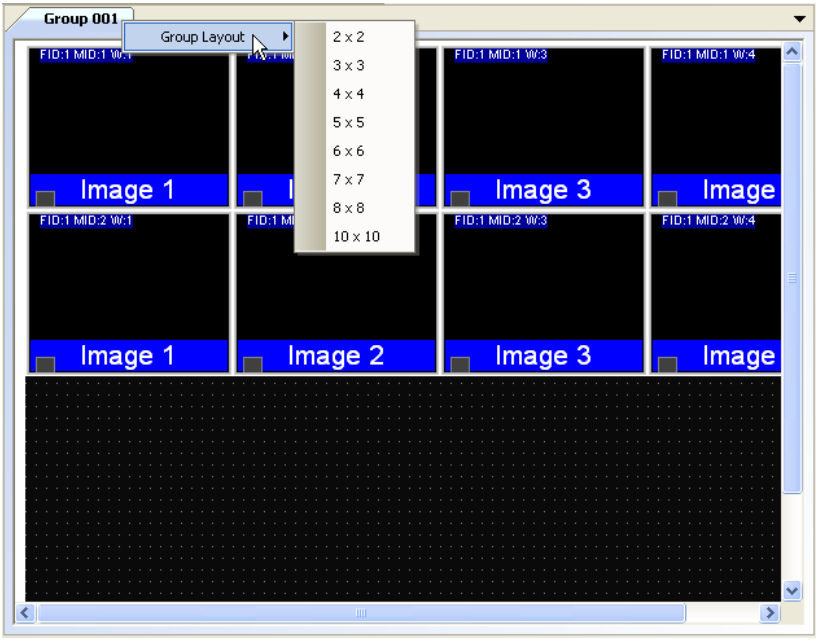
13. To allow the Phoenix-Q software to connect to the router, use the tpcGW utility (refer to the tpcGW Utility Quick Reference Guide for details).

Window Layout

Arranging Windows (by Group)

To quickly setup the layout for your video windows right-click the mouse on the on the **Group #** tab to access the **Group Layout** menu. Select from **2**×**2** up to **10**×**10** as possible grid positions on the monitor display.

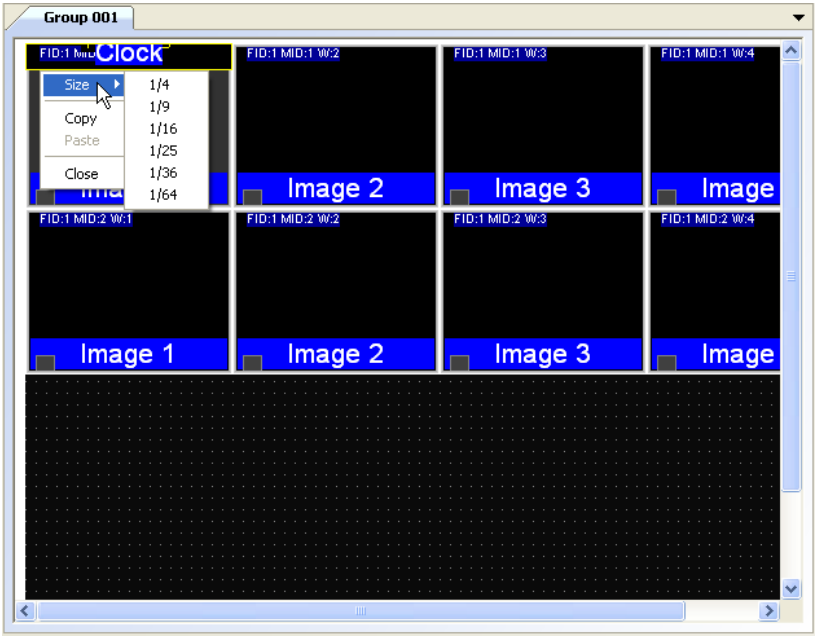
> **NOTE:** The layout size available for your particular model will depend on the monitor display's resolution as well as the smallest window size limitation.



Resizing Window

To resize a single window to one of the preset sizes perform the following steps:

1. Right-click the mouse on a particular window and select **Size**, followed by the desired preset size selection.



2. Alternatively, resize a window by dragging the border of a window to the desired size. Keep in mind that there is a scaling limitation for each window that limits the maximum scalable size to 816×465 pixels for NTSC video and 816×560 for PAL video.

Repositioning an Individual Window

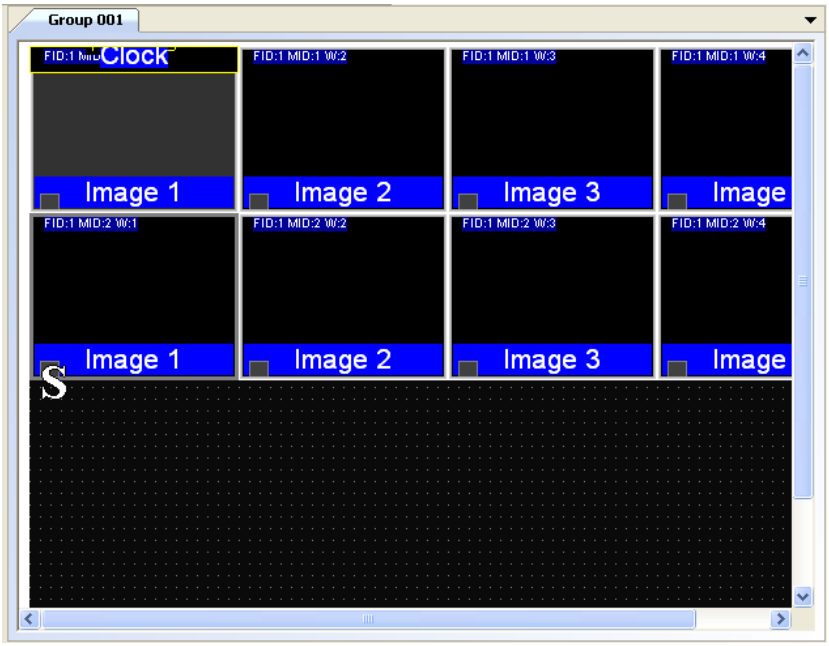
To reposition a window, drag the center of a window and drop to a new position and it will update on the monitor display. Or, upon selecting a window, use the left / right / up / down arrow buttons on your keyboard.

Quick Keys – Change Window to / from Full Screen Mode; Swap Window Contents

Two quick keys are available that allow you to quickly bring a window to / from full screen mode, as well as swap the contents from one window to another, by performing the following steps:

1. To change to full screen mode double-click the mouse on a window. Double-click again to return from full screen mode.

2. To access the swap window quick key move your cursor to the bottom left corner of a window until a capital letter **S** appears.



3. Click on the capital letter **S** to select the source window and then click again at a destination window where you want to swap the contents from the source. This will swap all the contents and properties of the source window to the destination window.

1.8 Resetting to the Factory-Default State

To reset your Rainier 3G to the factory-default state perform the following steps:

1. Power-off the Rainier 3G by unplugging the power cord.
2. Push the number **2** dip switch located on the Rainier 3G rear panel downward to the **ON** position.

3. Power-on the Rainier 3G by plugging in the power cord (make sure that power is available).
4. Push back the number **2** dip switch upward to the default position.

2 Using the Phoenix-Q Software

This chapter introduces you to the Phoenix-Q software for setting the features of your Rainier 3G; as well as familiarizes you with the menus appearing on the Phoenix-Q software.

> **NOTE:** Some items appearing on the menus of the Phoenix-Q software may not yet be available (grayed-out) as of the writing of this preliminary User Manual.

2.1 Main Menu

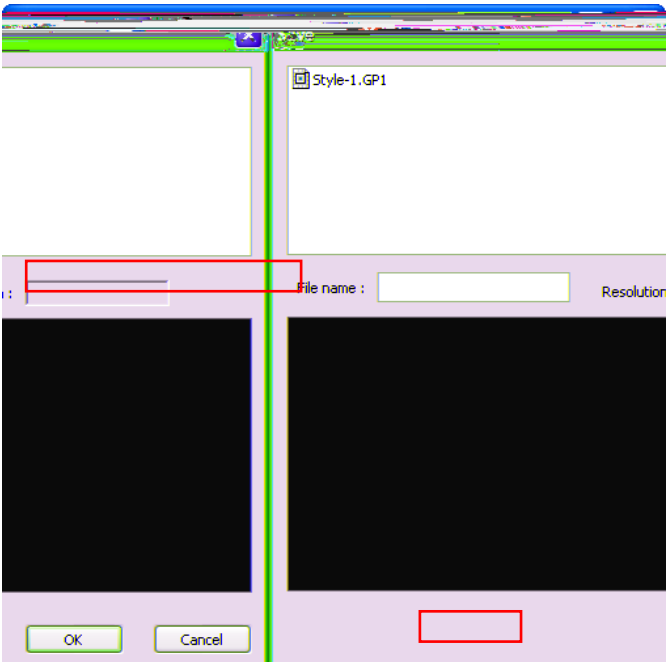
File Menu

Save Preset

All the presets you create are stored in the Rainier 3G and not in the computer that is running the Phoenix-Q software. In order to write all the presets into the internal flash memory of the Rainier 3G after creating it you will need to save to flash. To save a preset, perform the following steps:

1. Configure the layout to how you want it to be displayed.

2. Click **Save Preset**.
3. When the next screen appears enter a unique filename for the preset, and select **OK** to save.

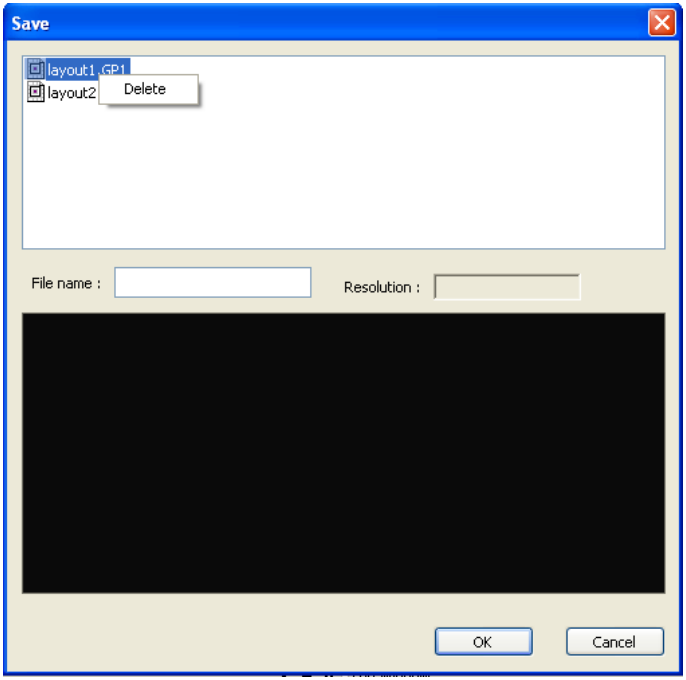


- When using a keypad, use the numbers **0** – **9** for your preset names.
- When using the GPI, use the numbers **1** – **8** for your preset names.

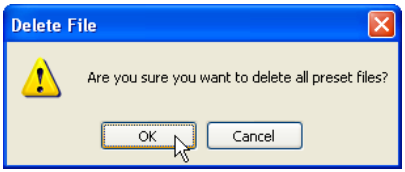
The file extension **GP#** will be automatically added to the filename.

4. Repeat the above steps for each additional preset.
5. After you are done creating presets load the file that you want to be the master layout which will load when the Rainier 3G is powered on.
6. Close the Phoenix-Q software.

NOTE: You can delete a file appearing on the **Save** window by right-clicking the filename and clicking **Delete**.

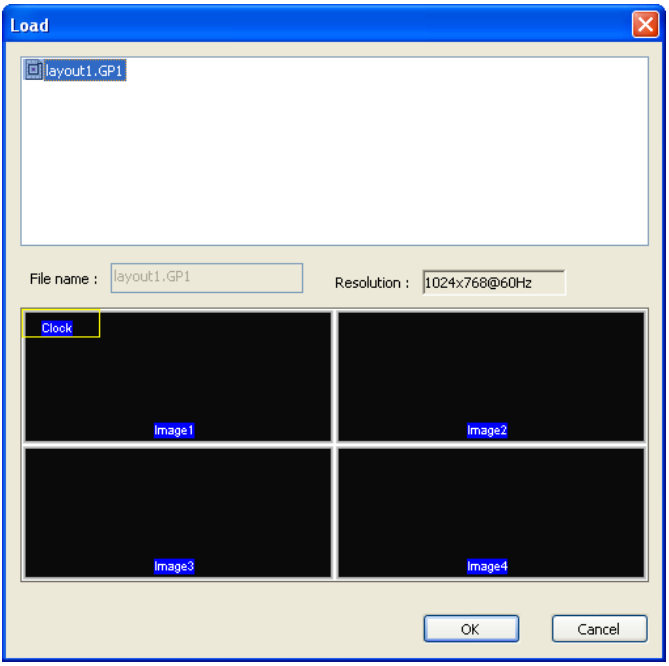


NOTE: To delete all the files appearing on the window right-click anywhere inside the window (except on the filename itself) and click **Delete All**. When the confirmation window appears click **OK** to proceed.

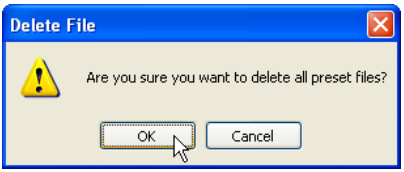


Loading File

1. Click **Load Preset**.
2. Select a saved file and then click **OK** to load the preset.



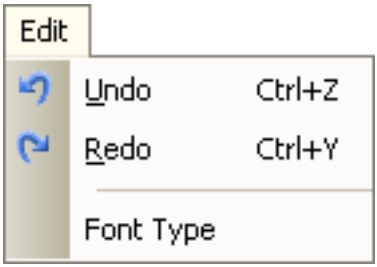
NOTE: Just like the **Save** window you can delete a file appearing on the **Load** window by right-clicking the filename and clicking **Delete**. To delete all the files appearing on the window right-click anywhere inside the window (except the filename itself) and click **Delete All**. When the confirmation window appears click **OK** to proceed.



Exit

This option allows you to close the Phoenix-Q software and all the changes would be automatically saved to the configuration file “System.agi” in the device’s flash memory.

Edit Menu



Undo

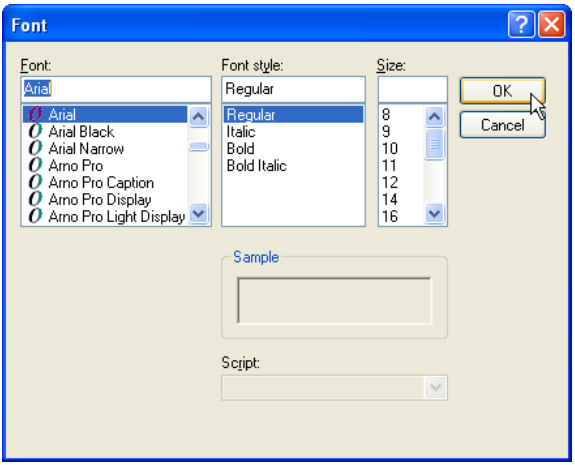
This option allows you to undo the previous step.

Redo

This option allows you to redo the previous step that was undone.

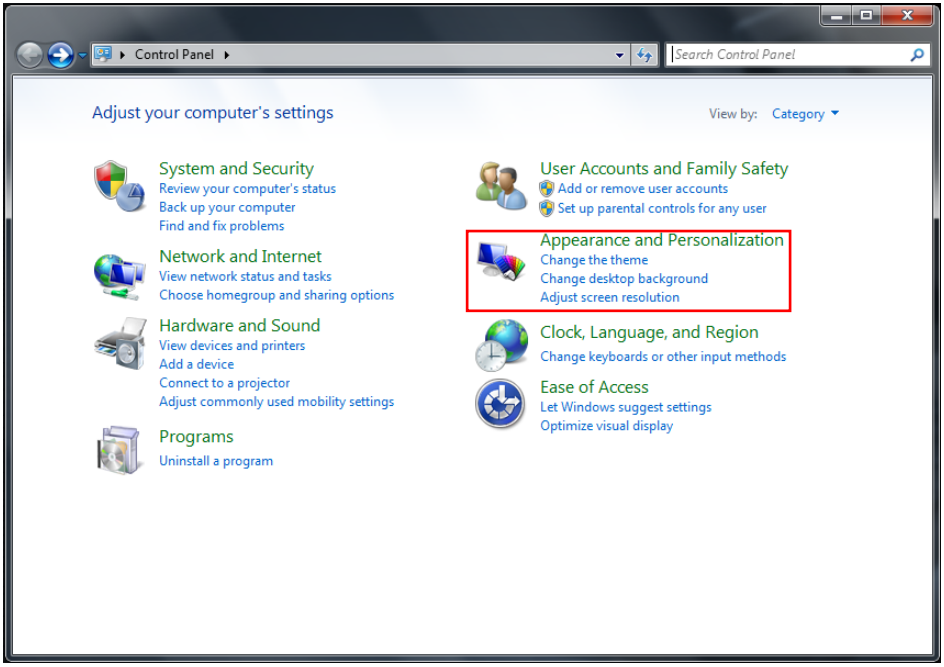
Font Type

Upon clicking **Font Type** the following screen appears that allows you to set the **Font**, **Font style**, and **Size**. After setting click **OK**.

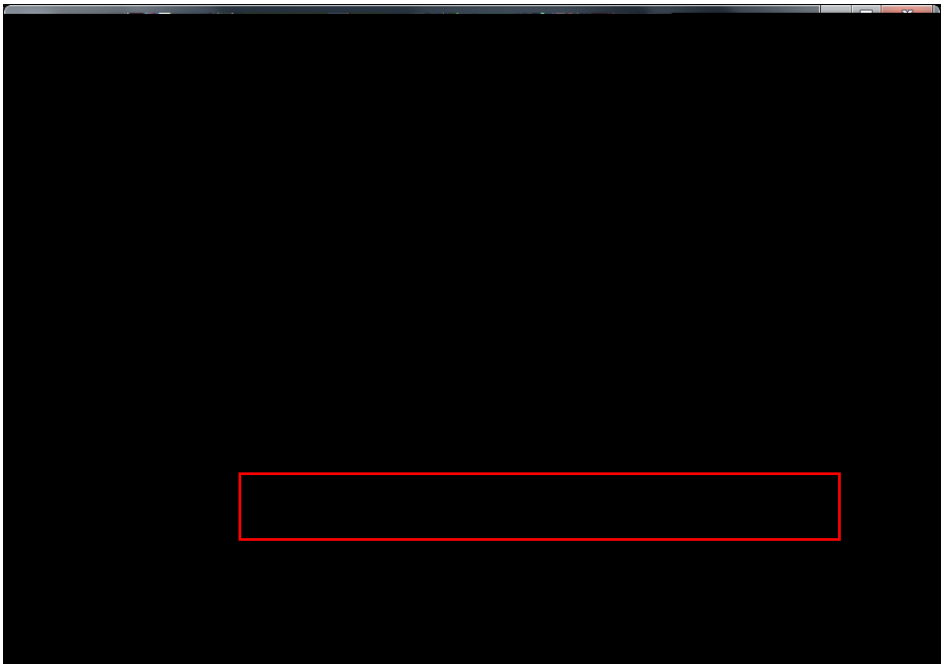


NOTE for Windows 7: When using the Phoenix-Q in a different language other than English the **Font** "Arial" might not appear as the default font-type. This may cause the label appearing in the window to appear askew. Perform the following steps to return the default font type to **Arial**.

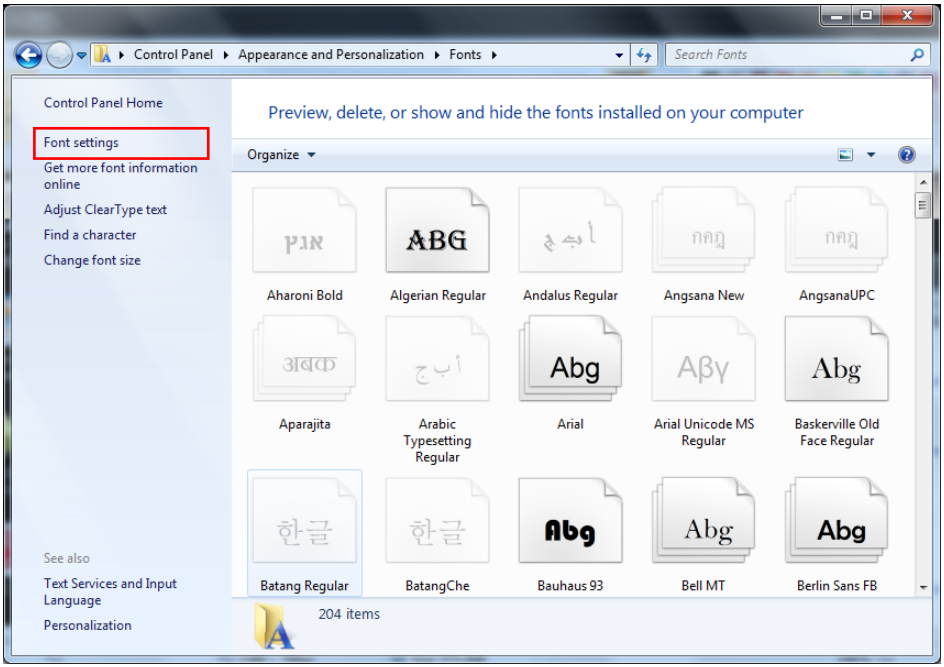
1. Click **Control Panel** in Windows 7 operating system and when the following screen appears click **Appearance and Personalization**.



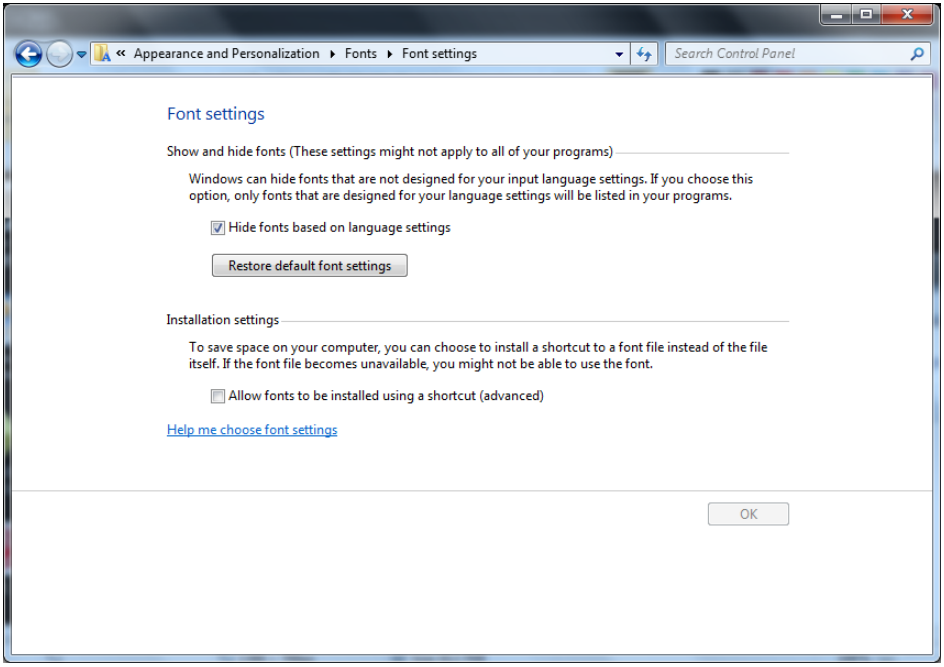
2. On the next screen click **Change Font Settings** under **Fonts**.



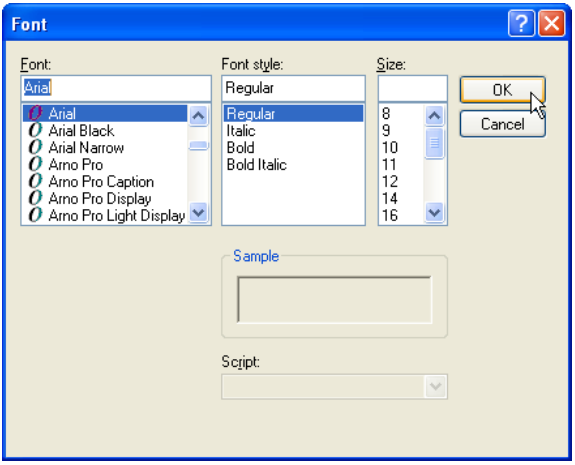
3. On the next screen click **Font settings**.



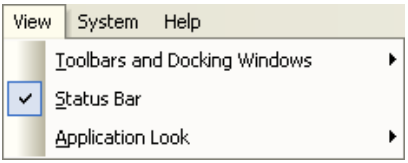
4. On the next screen click to unselect the **Hide fonts based on language settings** checkbox. Then click **OK** to exit.


« Appearance and Personalization ▸ Fonts ▸ Font settings
Search Control Panel
Font settings
Show and hide fonts (These settings might not apply to all of your programs)
Windows can hide fonts that are not designed for your input language settings. If you choose this option, only fonts that are designed for your language settings will be listed in your programs.
Hide fonts based on language settings
Restore default font settings
Installation settings
To save space on your computer, you can choose to install a shortcut to a font file instead of the file itself. If the font file becomes unavailable, you might not be able to use the font.
Allow fonts to be installed using a shortcut (advanced)
Help me choose font settings
OK

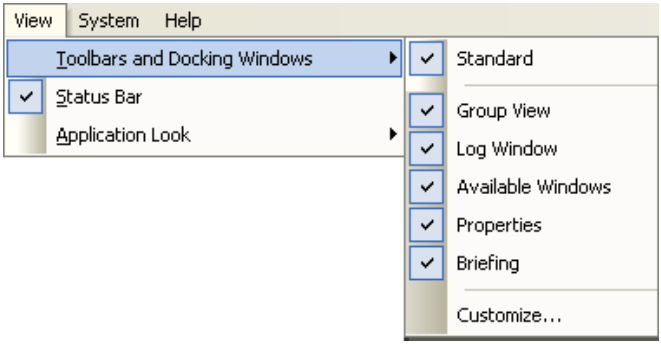
5. On your Phoenix-Q software click to select **Arial** as the default **Font** and click **OK**.



View Menu

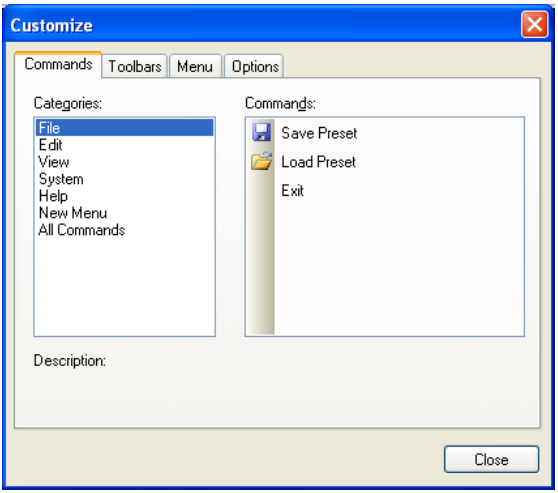


Toolbars and Docking Windows



This option allows you to enable (with checkmark) or disable the display of the **Standard** toolbar, **Available Windows** panel, **Log Window** panel, **Group View** panel, **Properties** panel, **Briefing** panel, as well as **Customize**.

Upon clicking **Customize** the following screen will appear.

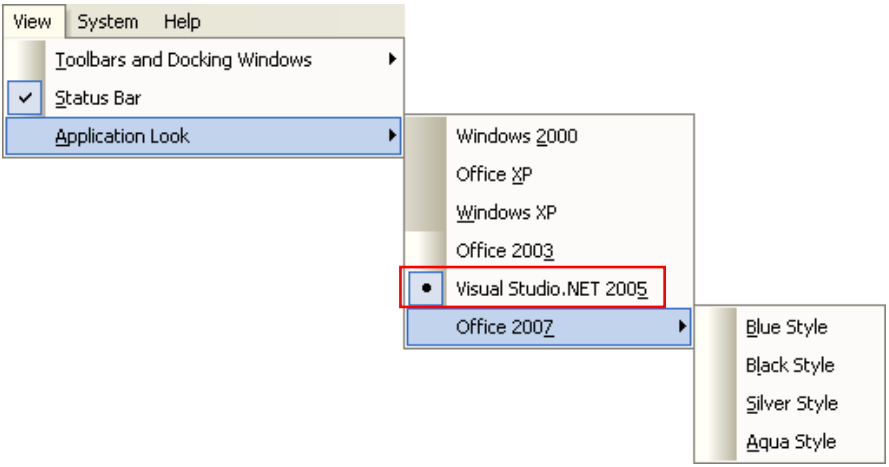


The **Customize** window allows you to customize the look of the menus and commands appearing on the Phoenix-Q software. Click the particular folder (**Commands**, **Toolbars**, **Menu**, and **Options**) and then make the necessary changes. Click **Close** when finished to exit.

Status Bar

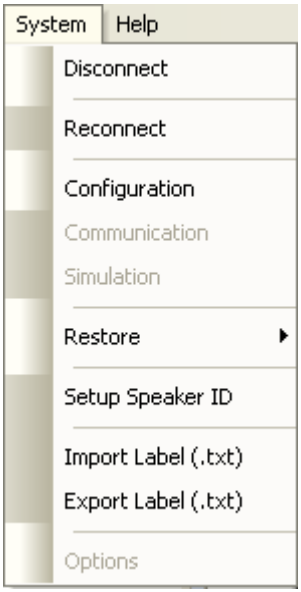
This option allows you to show (with checkmark) or hide the **Status Bar** appearing on the bottom of the Phoenix-Q software.

Application Look



This option allows you to select the overall design and theme of the Phoenix-Q software. Try to click and select the various options available and view the changes afterwards (for example, the "dot" in front of the option **Visual Studio.NET 2005** signifies that it is currently selected).

System Menu



Connect / Disconnect

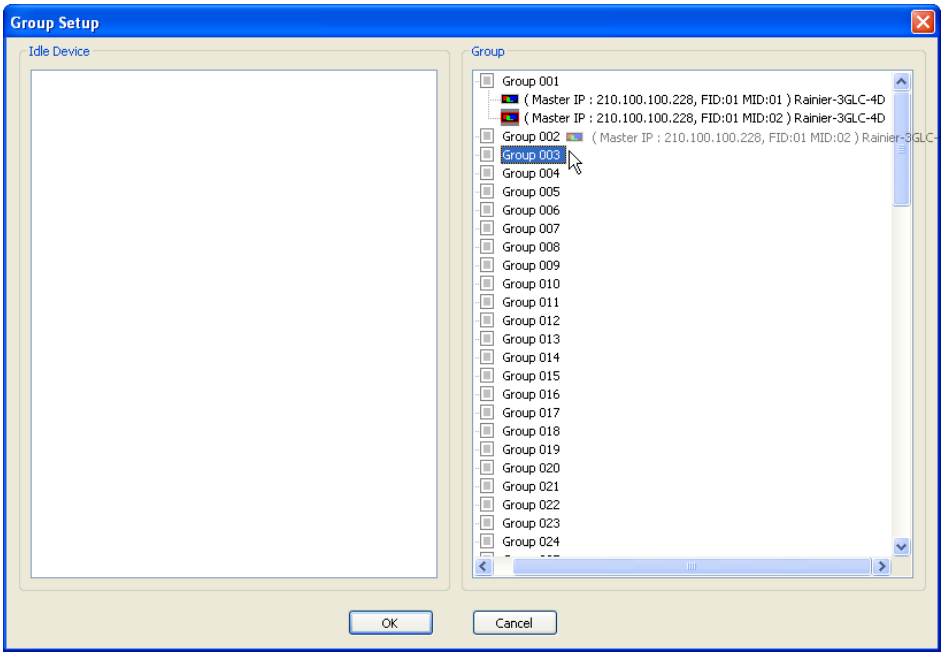
This option allows you to **Connect** the computer and Rainier 3G via Ethernet or serial port connection; or to **Disconnect** it. Before connecting make sure that the correct configurations are entered under the item **Communication**.

Reconnect

When you have unplugged the IP cable or serial cable and re-connected it click **Reconnect** to continue the configuration process.

Configuration

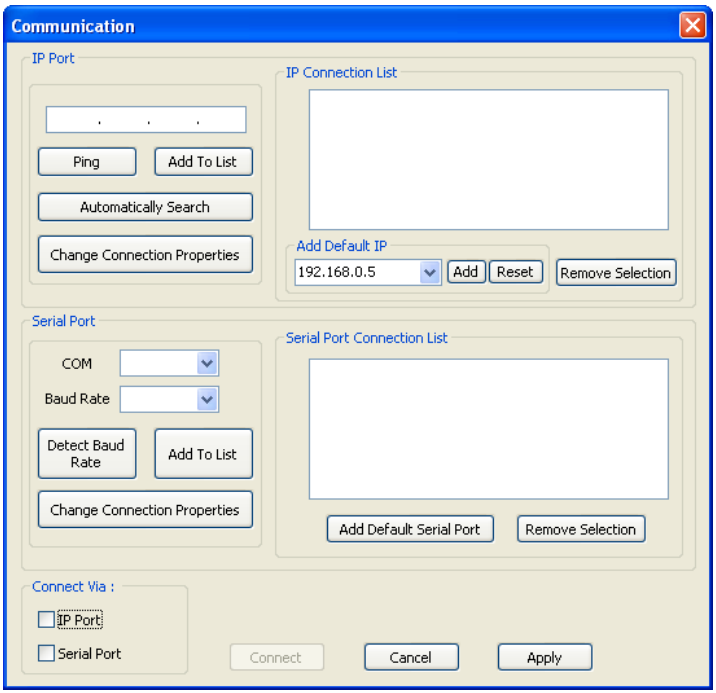
Upon clicking **Configuration** the following screen appears. The **Group Setup** window will appear to allow you to assign the groupings. Create the configuration of a particular group (for example move the module to another group as so desired by dragging the module listed under **Group 001** to **Group 003**) and then click **OK**. Phoenix-Q will save the configuration file "System.agi" to the device's flash memory.



NOTE: This item is only available when the computer is connected to the Rainier 3G(s).

Communication

Upon clicking **Communication** the following screen will appear. This option allows you to select the mode of connection (via **IP Port** "Ethernet" or **Serial Port**) between the computer and Rainier 3G.



> **NOTE:** This item is not available when the computer is presently connected to the Rainier 3G multiviewer(s).

Simulation (future option)

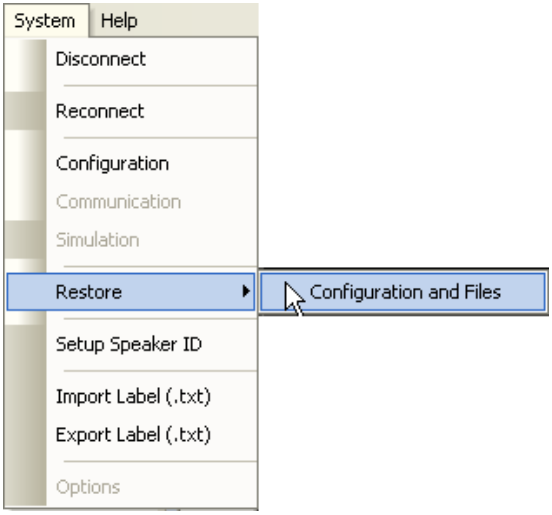
After selecting the mode of connection between the computer and the Rainier 3G (see the previous item **Communication**) you can click **Simulation** to view a simulation of the type of connection selected.

Restore

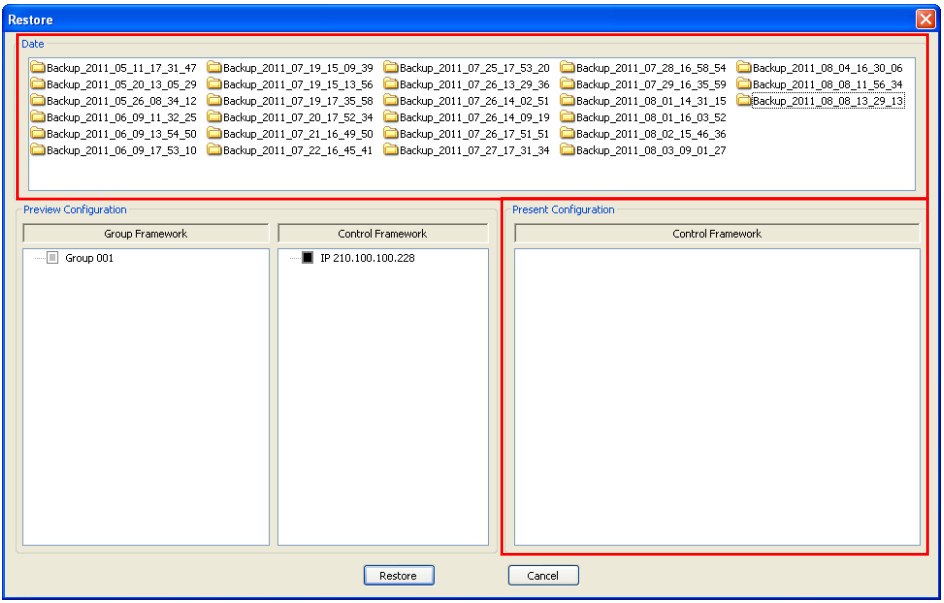
> **NOTE:** This item is only available when the computer is connected to the Rainier 3G(s).

To manually restore a preset perform the following steps:

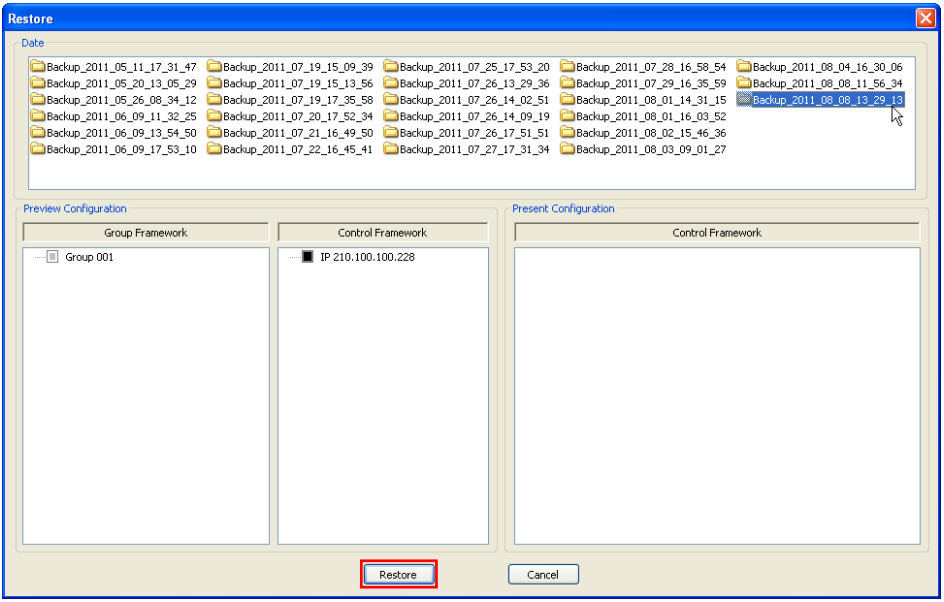
1. Set the Rainier 3G(s) to the factory-default value.
2. Make sure that the rotary **ID** of the multiviewer unit(s) being restored matches the old unit(s) (if the same unit is not being restored) and that the form of communication is the same (IP or RS-232).
3. Click **System→Restore→Configuration and Files**.



4. The following screen will appear. The **Date** window shows various folders with the date (automatically generated) when preset(s) were saved. The **Present Configuration** window shows the present setup of the Rainier 3G.



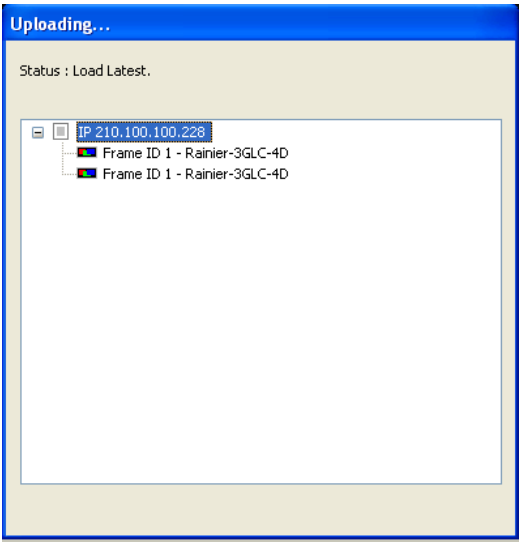
5. Click to select a restore point (e.g., **Backup_2011_08_08_13_29_13**). System will automatically compare the setup listed in **Present Configuration** window with the setup listed in **Preview Configuration** window (e.g., **Identical**, **Different**, **New Device**).



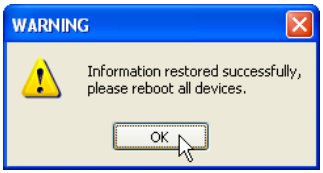
> **NOTE:** When the setup of the **Present Configuration** window is different from the setup in the **Preview Configuration** window (e.g., upon selecting **Backup_2011_05_11_17_31_47** folder in the **Date** window) then restore is not allowed by the system and the **Restore** button remains grayed-out.

6. Click the **Restore** button.

7. The following screen will appear.

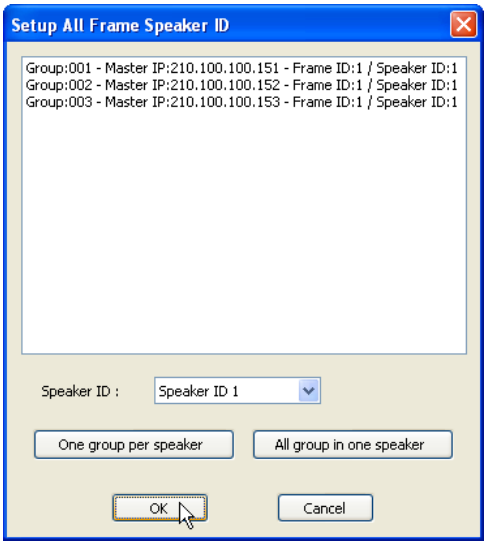


8. When the following screen appears reboot the Rainier 3G(s) to complete the "restore" process.



Setup Speaker ID

Upon clicking **Setup Speaker ID** the following screen will appear. Use this function to set up the speaker to monitor the audio source by assigning the **Speaker ID** number (**1** to **32**) for each frame ID. Click to assign **One group per speaker** or to assign **All group in one speaker**. Then click **OK** to exit.


Setup All Frame Speaker ID
Group:001 - Master IP:210.100.100.151 - Frame ID:1 / Speaker ID:1
Group:002 - Master IP:210.100.100.152 - Frame ID:1 / Speaker ID:1
Group:003 - Master IP:210.100.100.153 - Frame ID:1 / Speaker ID:1
Speaker ID :
Speaker ID 1
One group per speaker
All group in one speaker
OK
Cancel

> **NOTE:** This item is only available when the computer is connected to the Rainier 3G(s).

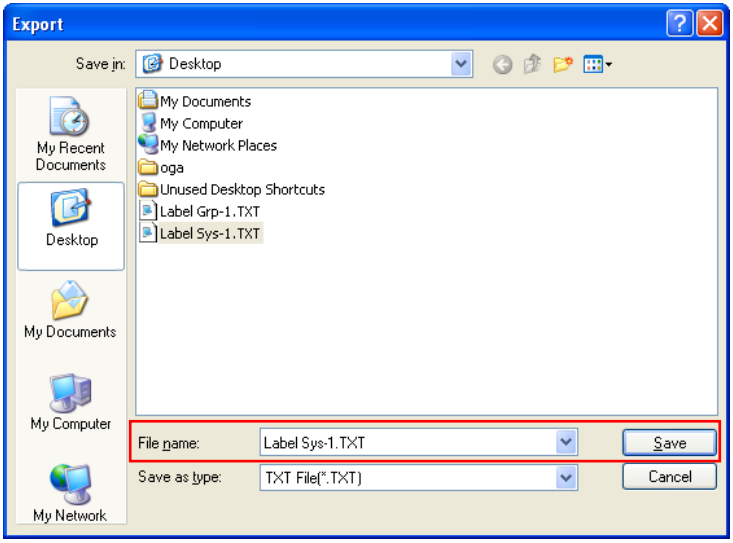
Import / Export Label (.txt)

> **NOTE:**
> - The settings here will affect all the labels of the Groups in the System.
> - These items are only available when the computer is connected to the Rainier 3G(s).

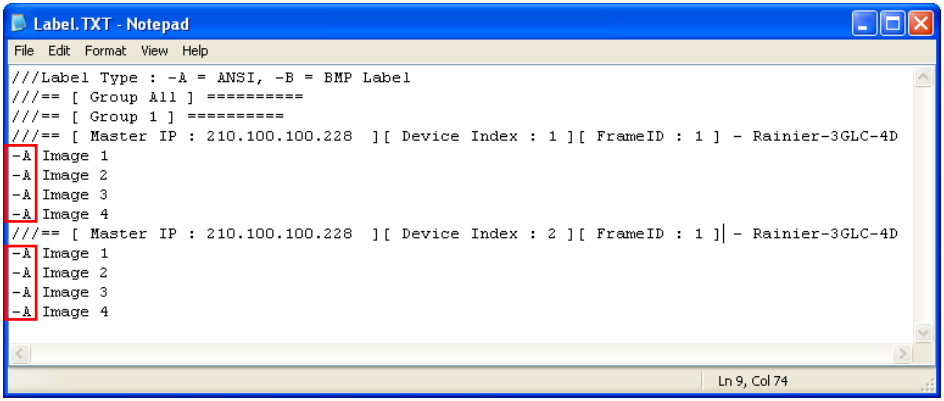
This allows you to import label from / export label to Microsoft® Notepad to be edited externally. The most convenient way is to export the file (label) as:

- **Label** (**ANSI** – up to 30 characters; can contain the English characters A – Z, a – z, 0 – 9), or
- **BMP Label** (Unicode – up to 15 characters; useful for displaying text other than the English language) **txt** file

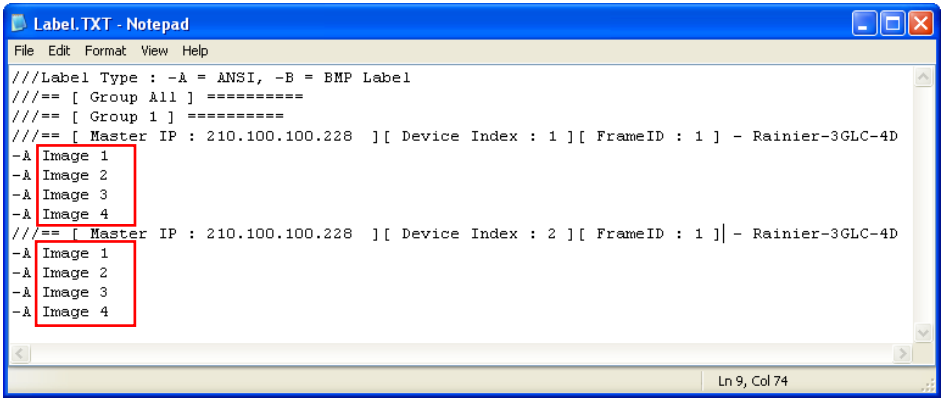
1. Click **System→Export Label (.txt)** and when the next screen appears assign a filename. Then click **Save**.



2. Using Microsoft® Notepad open the exported text file. The first row of text provides a guide to the two (2) types of labels (**A** for **ANSI** / **B** for **BMP Label**). Change the label type as desired by typing **A** or **B** after the dash "**–**" (highlighted in red as shown below).

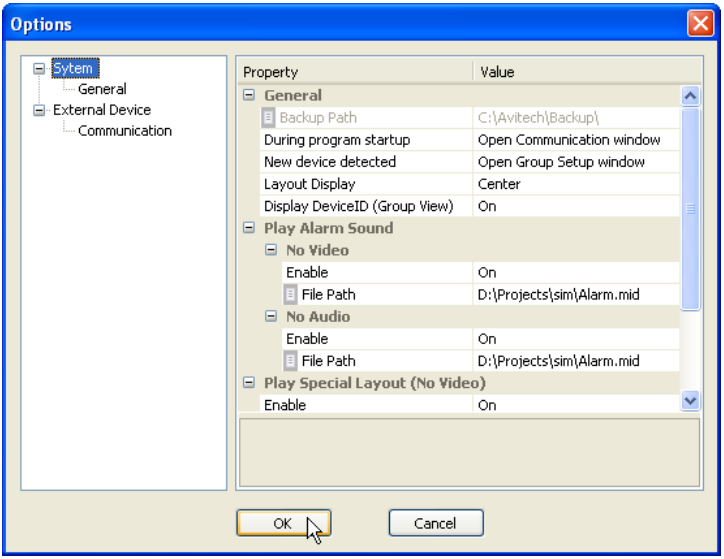

Label.TXT - Notepad
File Edit Format View Help
///Label Type : -A = ANSI, -B = BMP Label
///== [Group All] ==========
///== [Group 1] ==========
///== [Master IP : 210.100.100.228][Device Index : 1][FrameID : 1] - Rainier-3GLC-4D
-A Image 1
-A Image 2
-A Image 3
-A Image 4
///== [Master IP : 210.100.100.228][Device Index : 2][FrameID : 1] - Rainier-3GLC-4D
-A Image 1
-A Image 2
-A Image 3
-A Image 4
Ln 9, Col 74

3. Then edit the text in the file (highlighted in red as shown below). When you are done editing the label save the **`txt`** file and import it. The on screen labels will be updated.


Label.TXT - Notepad
File Edit Format View Help
///Label Type : -A = ANSI, -B = BMP Label
///== [Group All] ==========
///== [Group 1] ==========
///== [Master IP : 210.100.100.228][Device Index : 1][FrameID : 1] - Rainier-3GLC-4D
-A Image 1
-A Image 2
-A Image 3
-A Image 4
///== [Master IP : 210.100.100.228][Device Index : 2][FrameID : 1] - Rainier-3GLC-4D
-A Image 1
-A Image 2
-A Image 3
-A Image 4
Ln 9, Col 74

Options

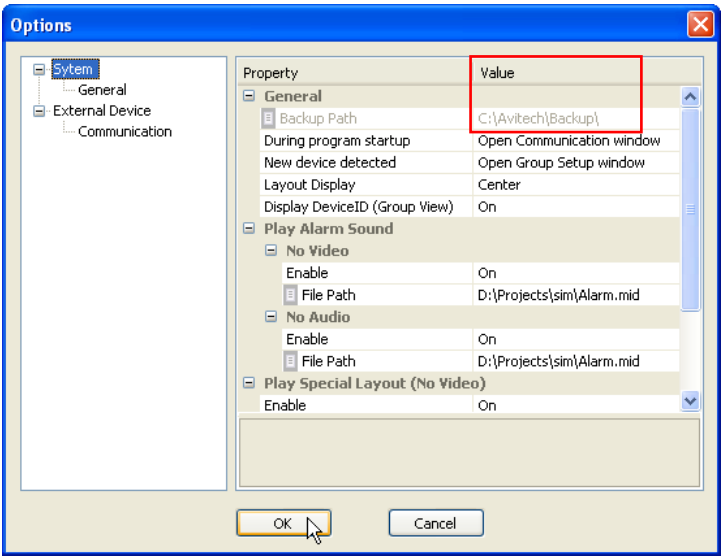
NOTE: This item is not available when the computer is connected to the Rainier 3G(s).



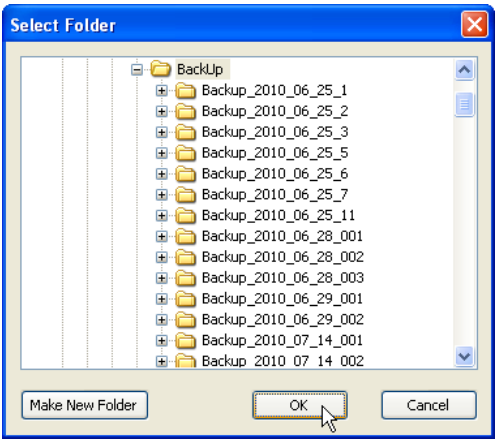
The **Options** screen that contains the following will appear.

System→General

The default backup path "C:\Avitech\Backup\" that contains the system configuration, preset files, system log data, and firmware version information is shown. To change the backup path, type in the desired path in the **Value** column.

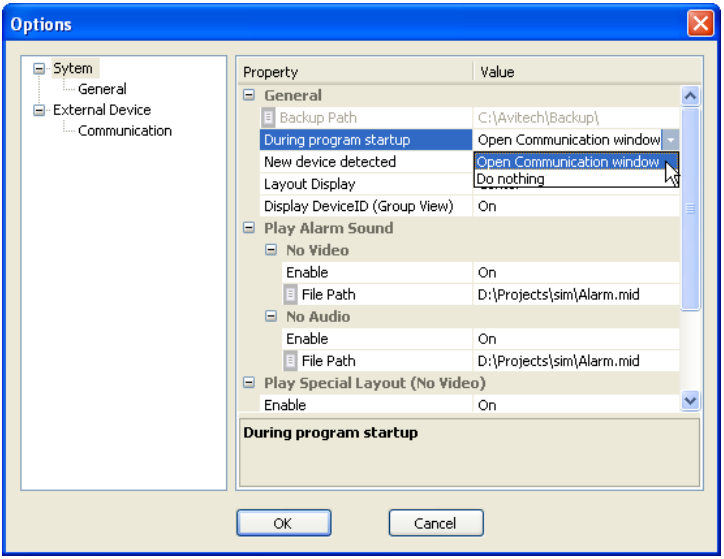


Or click the select folder button "…" and when the **Select Folder** screen appears select from the existing folders or click the **Make New Folder** button to create a new folder. Then click **OK** to exit.



General→During Program Startup

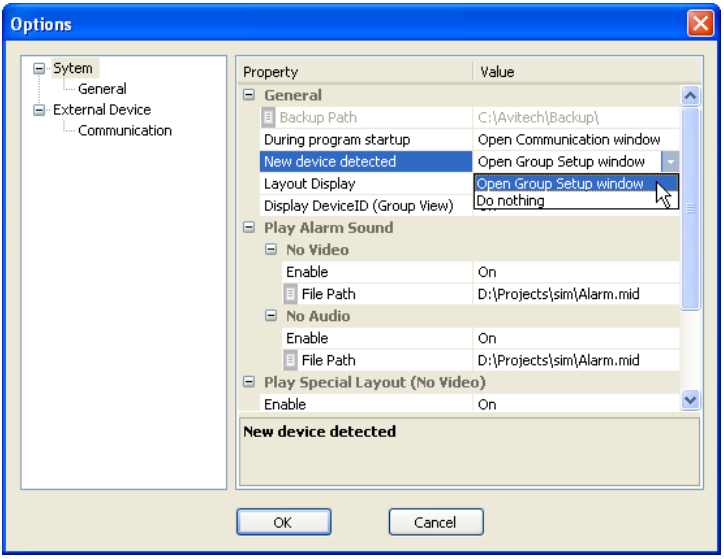
Click the drop-down button (use the mouse to click the cell's rightmost portion) to select **Open Communication window** that allows the Phoenix-Q program to automatically open the **Communication** window upon startup.



General→New Device Detected

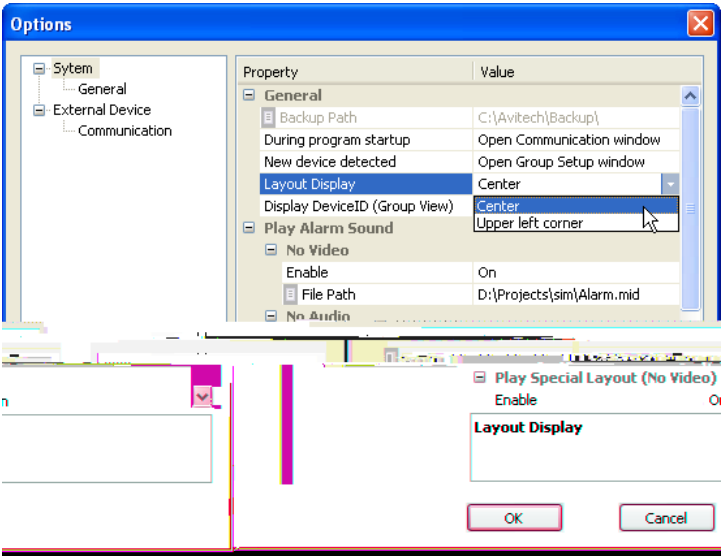
Click the drop-down button (use the mouse to click the cell's rightmost portion) to select **Open Group Setup window** that allows the Phoenix-Q program to automatically open the **Group Setup** window when a new device has been detected.

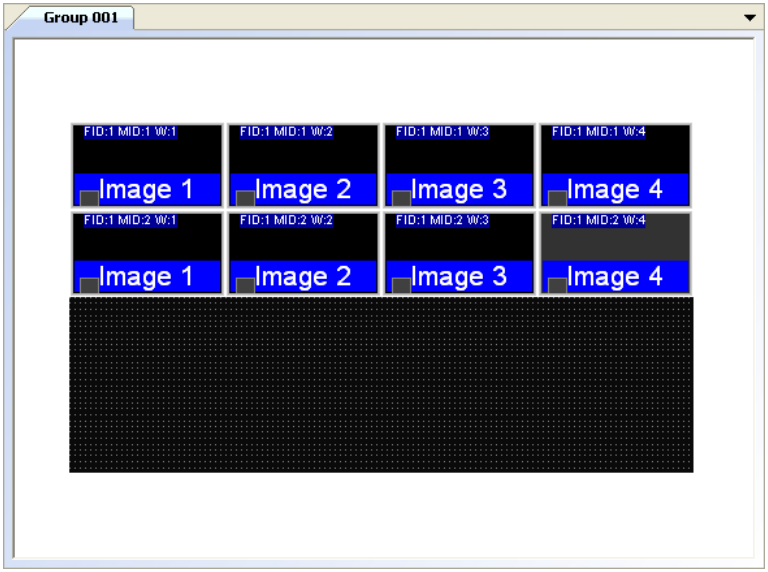
> **IMPORTANT:** To prevent error when detecting the new device it is highly recommended to return the new device to its default setting before connecting it to the present setup.



General→Layout Display

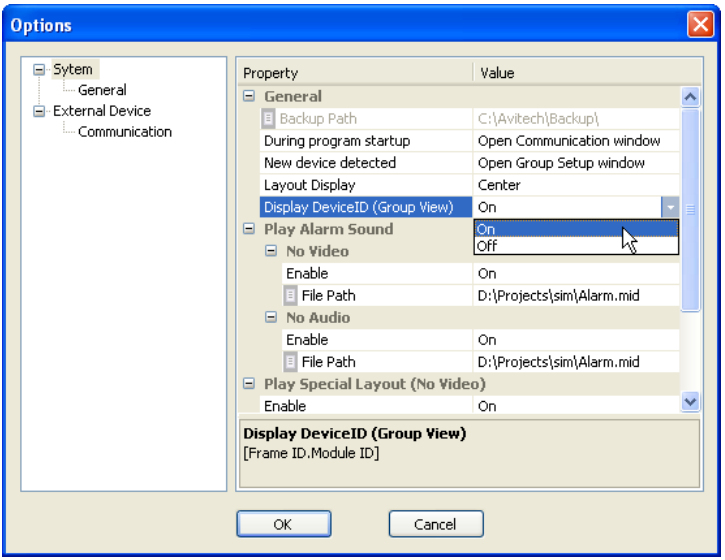
Click the drop-down button (use the mouse to click the cell's rightmost portion) to select **Center** or **Upper left corner** that allows the preview window to be displayed in the center (sample figure after next) or upper left corner.





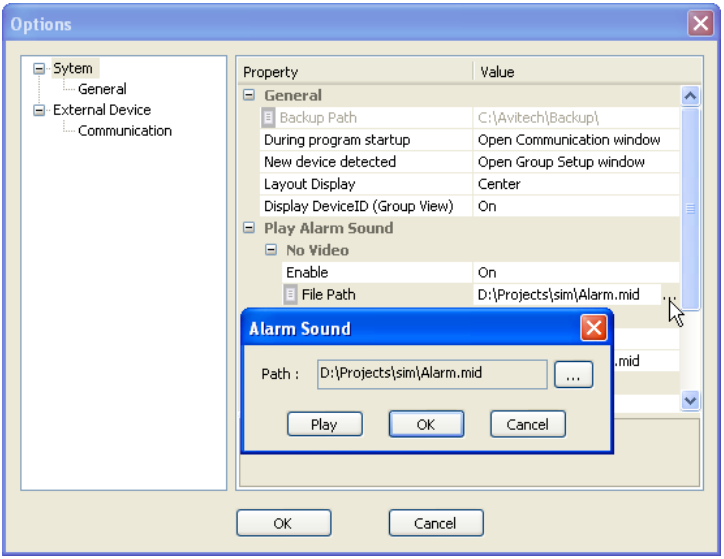
General→Display Device ID (Group View)

To display the device ID information in the **Group View** panel, make sure that **Display Device ID (Group View)** is enabled (set at **On**). Click the drop-down button [use the mouse to click the **Display Device ID (Group View)** cell's rightmost portion] to select **On**.



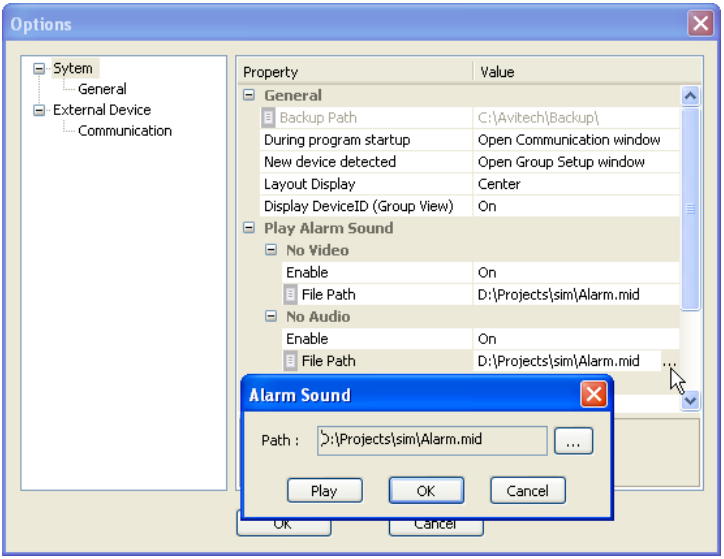
Play Alarm Sound→No Video

Make sure that **Play Alarm Sound** when **No Video** occurs is **Enable**d (set at **On**). Click the select folder button "…" and when the **Alarm Sound** screen appears click the select folder button … to choose another alarm sound to play when no video occurs. Click **Play** to hear a sampling of the alarm sound selected. Then click **OK** to exit.

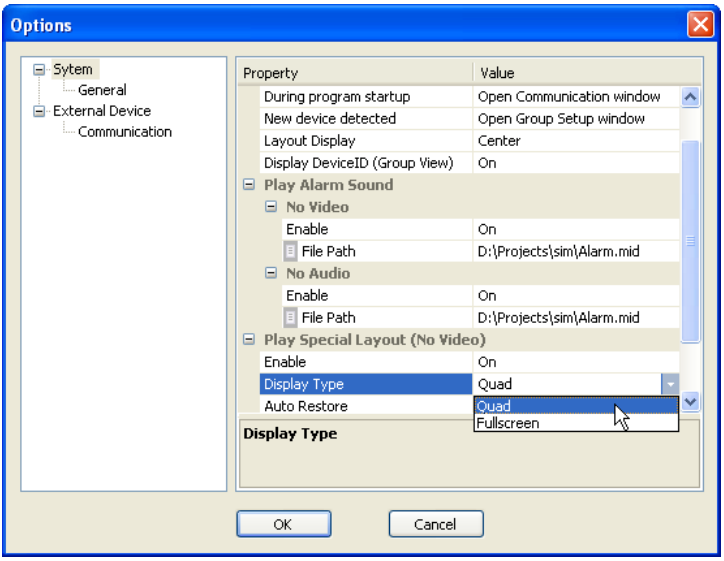


Play Alarm Sound→No Audio

Make sure that **Play Alarm Sound** when **No Audio** occurs is **Enable**d (set at **On**). Click the select folder button "…" and when the **Alarm Sound** screen appears click the select folder button … to choose another alarm sound to play when no audio occurs. Click **Play** to hear a sampling of the alarm sound selected. Then click **OK** to exit.



Play Special Layout (No Video)



Make sure that **Play Special Layout** when **No Video** occurs is **Enable**d (set at **On**). Click the drop-down button (use the mouse to click the **Display Type** cell's rightmost portion) to select **Quad** or **Fullscreen**. The following sample scenarios may occur:

Display Type: Quad

Sample scenario 1 – a single window loses video signal

Regardless of the present monitor display's window layout the quad layout would be displayed onscreen and the single window without video signal would occupy the top-left position to warn the user that the particular window has no video signal.

Sample scenario 2 – three windows lose video signal

Regardless of the present monitor display's window layout the quad layout would be displayed onscreen and the three windows without video signal would occupy the top-left, top-right, and bottom-left positions to warn the user that the three windows have lost video signal.

Display Type: Fullscreen

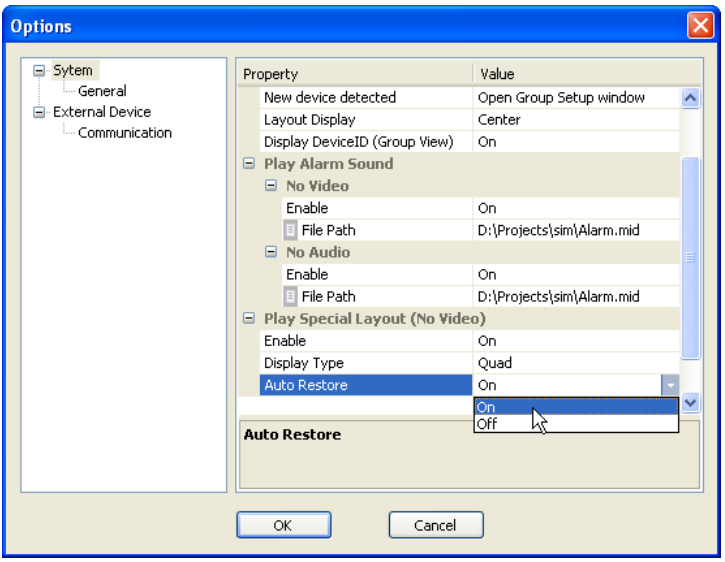
Sample scenario 1 – a single window loses video signal

Regardless of the present monitor display's window layout the fullscreen layout would be displayed onscreen and the single window without video signal would occupy the fullscreen to warn the user that the particular window has no video signal.

Sample scenario 2 – three windows lose video signal

Regardless of the present monitor display's window layout the last detected missing video signal of the three windows would occupy the fullscreen to warn the user.

Auto Restore



Sample scenario 1 – a single window loses video signal

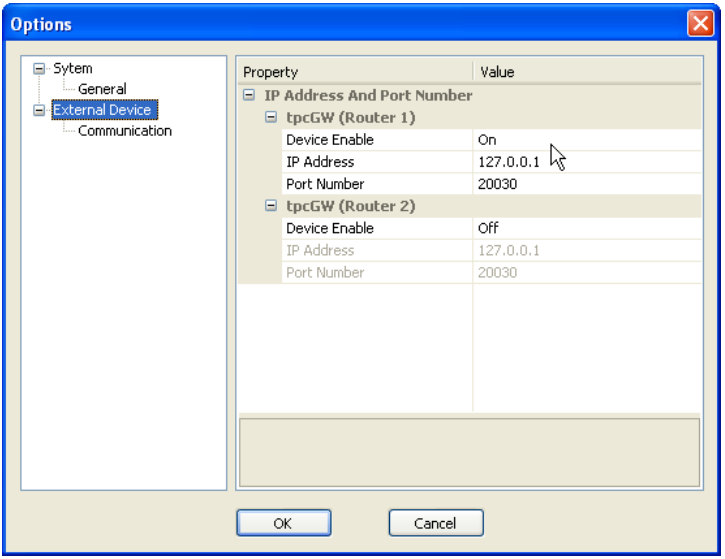
Allows the window layout to revert back to where it was before signal loss occurred. Click the drop-down button (use the mouse to click the **Auto Restore** cell's rightmost portion) to select **On.** When **Auto Restore** is disabled (set at **Off**) then right-click the window and select **Close** to allow the window layout to revert back to where it was before signal loss occurred.

Sample scenario 2 – window #2 has regained video signal out of the three windows that lost video signal

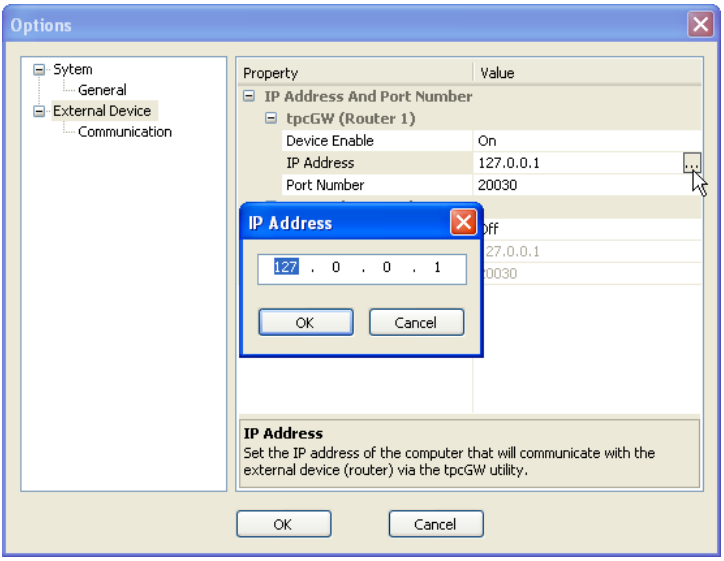
Allows window #2 that has regained video signal to be removed from the screen. Click the drop-down button (use the mouse to click the **Auto Restore** cell's rightmost portion) to select **On.** When **Auto Restore** is disabled (set at **Off**) then right-click the window and select **Close** to allow the window layout to revert back to what it was before signal loss occurred. For **Quad Display Type** (previous item) then window #3 would occupy the place vacated by window #2. Or, for **Fullscreen Display Type**, then the second-to-the-last window that lost video signal would occupy the whole screen.

External Device→IP Address

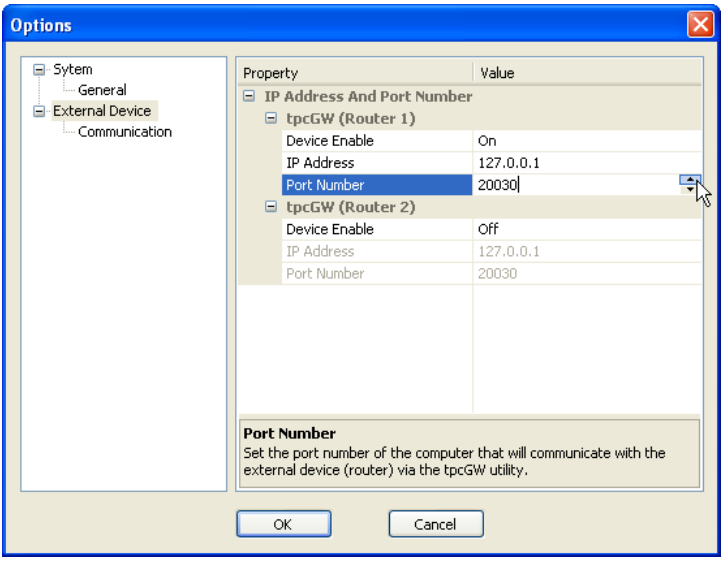
To allow the Phoenix-Q software to get the UMD (under monitor display) data from the router (when necessary) click **External Device** and make sure that **Device Enable** is set to **On**.



Make sure that the **IP Address** corresponds to the IP address of the computer running the tpcGW utility. If not, click the IP Address button "…" and when the **IP Address** screen appears, enter the correct value. Then click **OK** to exit.

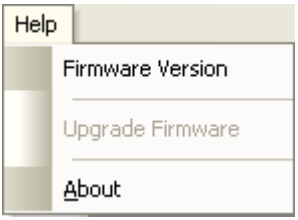


Lastly, make sure that the **Port Number** shown is correct. If not, enter the value directly or click the up / down arrow button. Then click **OK** to exit the **Options** screen setup.



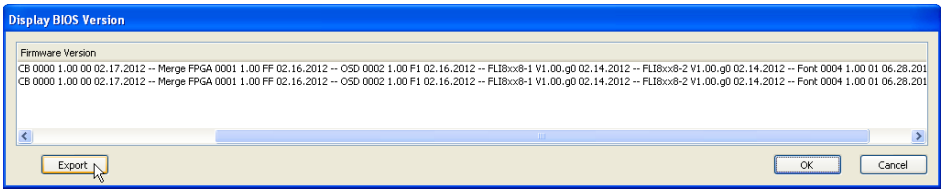
IMPORTANT: Make sure the value appearing for both **IP Address** and **Port Number** must be similar to the value entered in the tpcGW utility to be able to successfully connect to the router.

Help Menu



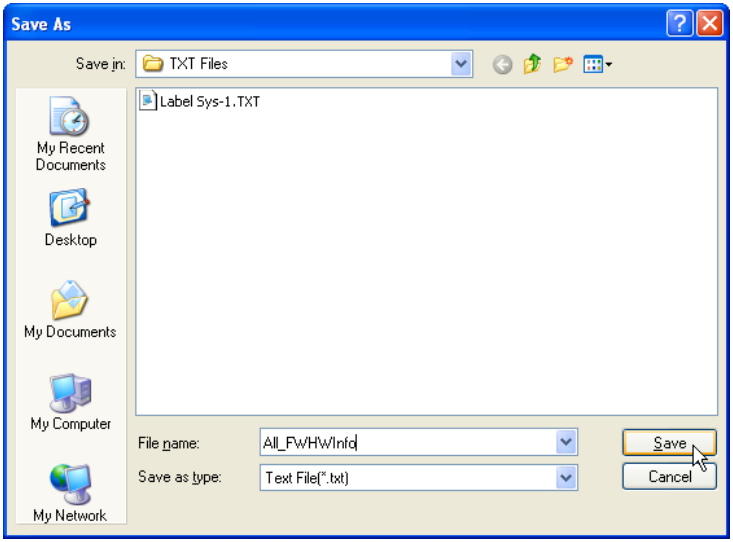
Firmware Version

1. Click **Firmware Version**. You should see a pop-up box showing the Rainier 3G firmware version.



2. Click **Export**.

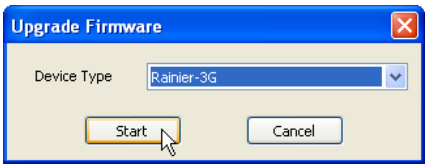
3. When the following screen appears assign a filename and click **Save** to save the data.



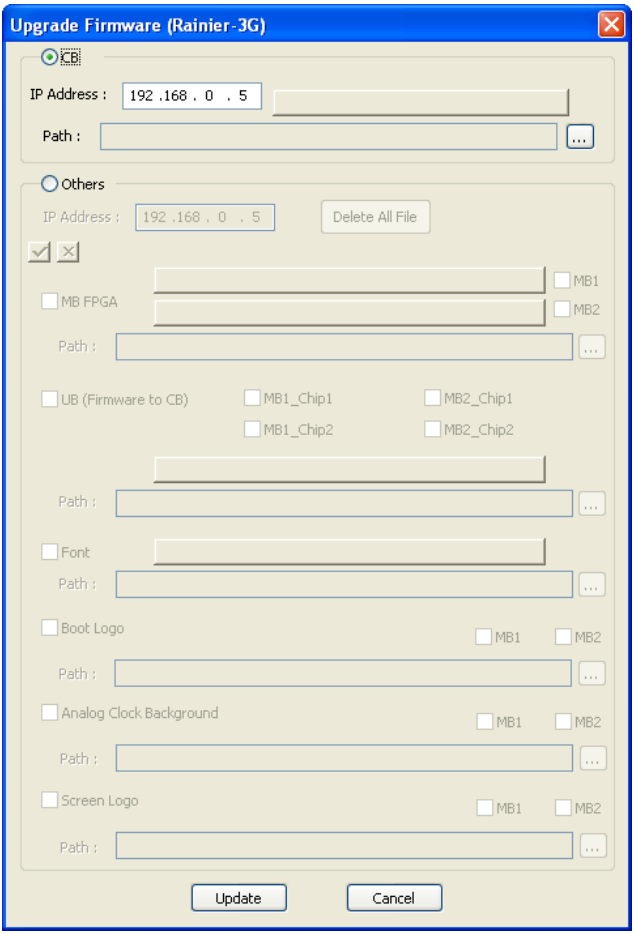
2.2 Upgrade Firmware

Control Board Firmware

1. Upon clicking **Upgrade Firmware** the following screen will appear. Make sure to select **Rainier 3G** on the **Device Type** drop-down menu and then click **Start**.



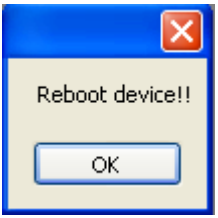
2. The following screen will appear. Make sure the radio button for **CB** is selected and on the **IP Address** portion use the factory-default setting "192.168.0.5" to connect the Rainier 3G to the computer.



3. Click the **Browse** button [...] to specify the location of the firmware file and select "Rainier-3G-CB-FW."

4. Click the **Update** button located on the lower left portion of the screen. The progress of update would be shown onscreen.

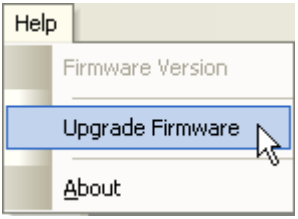
5. When the next screen appears pull off the power cord from the power jack to shutdown the Rainier 3G series. Next, re-attach the power cord to restart the Rainier 3G series.



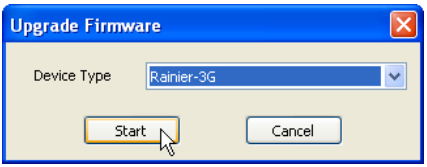
MB FPGA Firmware

To update the MB (main board) FPGA firmware perform the following steps:

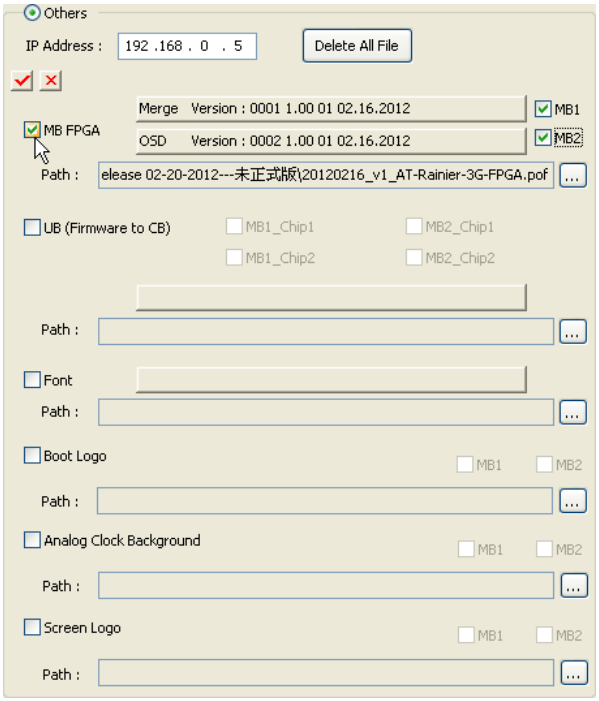
1. On the Phoenix-Q configuration software click **Help→Upgrade Firmware**.



2. The following screen will appear. Make sure to select **Rainier 3G** on the **Device Type** drop-down menu and then click **Start**.

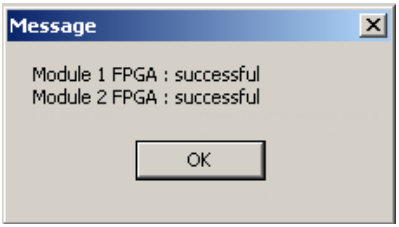


3. When the following screen appears click to select the radio button for **Others** and on the **IP Address** portion use the factory-default setting "192.168.0.5" to connect the Rainier 3G series to the computer.



4. Click to select the **MB FPGA** checkbox.
5. Click to select **MB1** and **MB2** to update both main boards FPGA or select the particular main board to update.
6. Click the **Browse** button … to specify the location of the firmware file and select "AT-Rainier-3G-FPGA.pof."
7. Click the **Update** button located on the lower left portion of the screen.
8. Reboot (unplug and re-plug the power cord) the Rainier 3G when MB FPGA firmware update is successful.

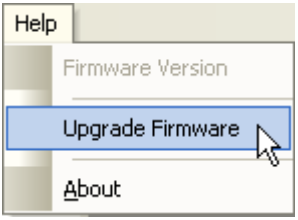
NOTE: Shutdown and startup of Rainier 3G needs to be done to completely update the MB FPGA firmware. The following screen shows a successful MB FPGA firmware upgrade.



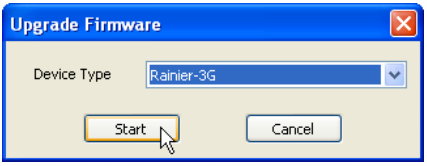
UB Firmware

To update the UB (upper board) firmware, perform the following steps:

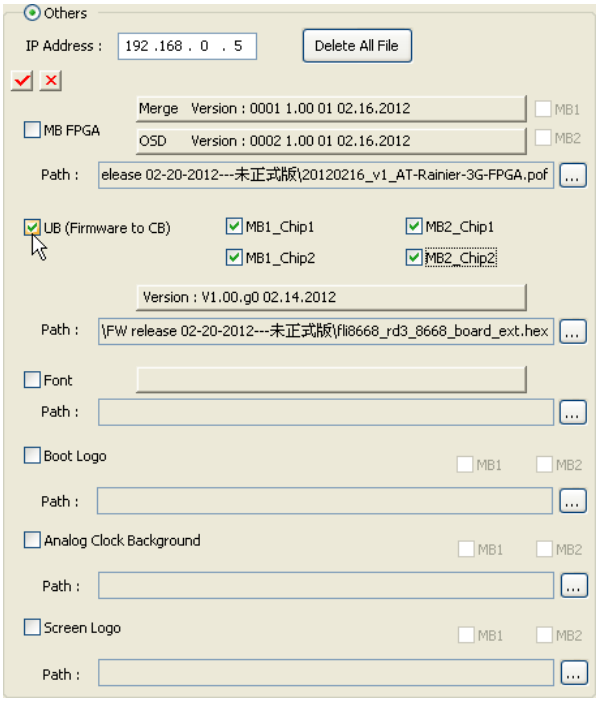
1. On the Phoenix-Q configuration software click **Help→Upgrade Firmware**.



2. The following screen will appear. Make sure to select **Rainier 3G** on the **Device Type** drop-down menu and then click **Start**.



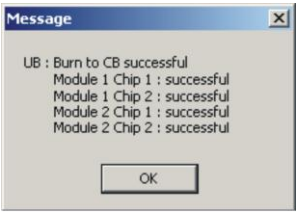
3. When the following screen appears click to select the radio button for **Others** and on the **IP Address** portion use the factory-default setting "192.168.0.5" to connect the Rainier 3G series to the computer.



4. Click to select the **UB (Firmware to CB)** checkbox.
5. Click to select **MB1_Chip1**, **MB1_Chip2**, **MB2_Chip1**, and **MB2_Chip2** to update all 8668 chips or select the particular chip to update.
6. Click the **Browse** … button to specify the location of the firmware file and select "fli8668_rd3_8668_board_ext.hex."
7. Click the **Update** button located on the lower left portion of the screen.
8. Reboot (unplug and re-plug the power cord) the Rainier 3G when UB firmware update is successful.

> **NOTE:** Shutdown and startup of Rainier 3G needs to be done to completely update the UB firmware.

The following screen will be displayed upon successful upgrade of upper board firmware.

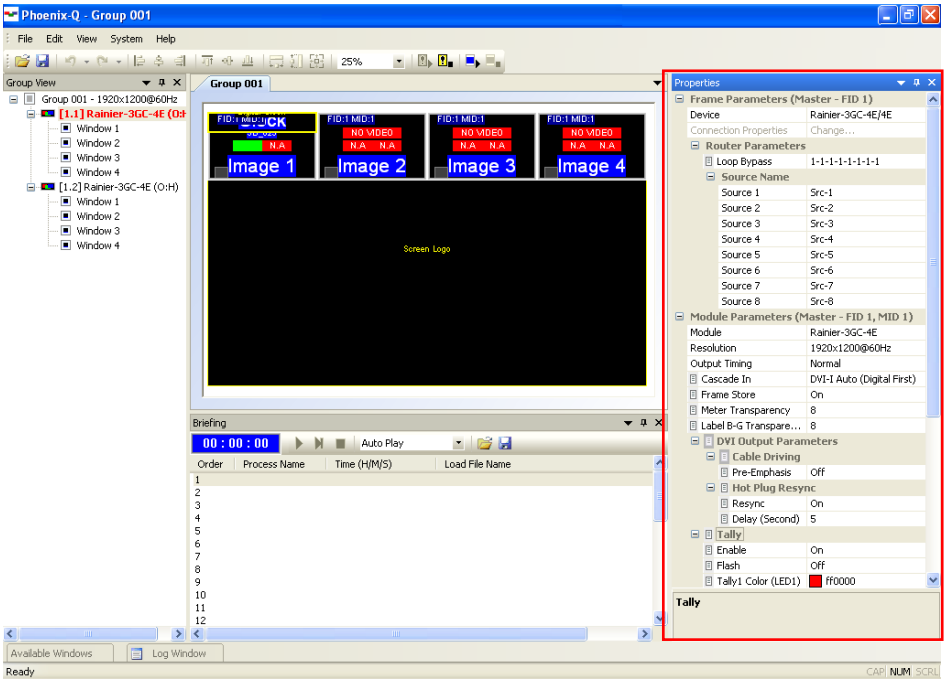

Message
UB : Burn to CB successful
Module 1 Chip 1 : successful
Module 1 Chip 2 : successful
Module 2 Chip 1 : successful
Module 2 Chip 2 : successful
OK

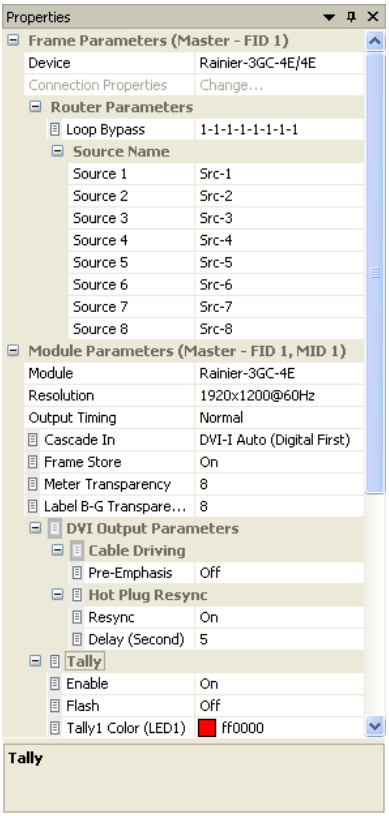
About

Click **About**. You should see a pop-up box showing the Phoenix-Q software information.

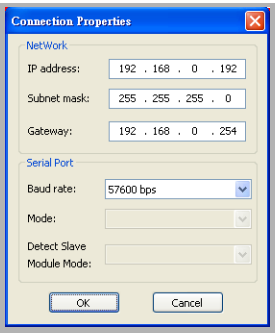
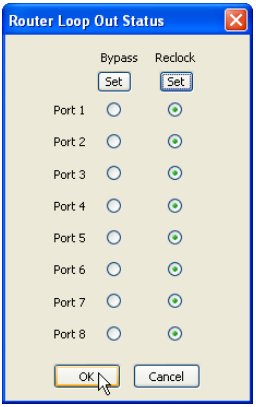
2.3 Setting the Group / Module Properties

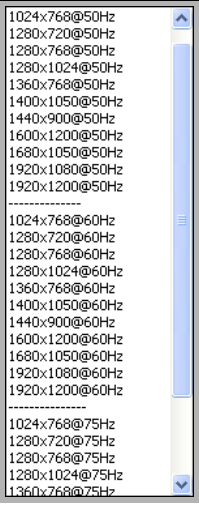
To start setting the properties of the Rainier 3G click to select the module on the **Group View** window (left panel) and the **Properties** window (right panel) would list the parameters available for setup.





NOTE: Some of the items appearing on the **Properties** window may or may not be available for your Rainier 3G.

Properties	Options (click on the item to set)	Description
Device	No setting allowed	Displays the device selected.
Connection Properties		Set the **Network Connection Properties** by entering the **IP address**, **Subnet mask**, and **Gateway**. Or, set the **Baud rate** when using the **Serial Port** to connect. NOTE: This item is available for slave module only.
Loop Bypass		By selecting the default setting **Reclock**, it enhances the **SDI IN 1 – 8** signal before outputting to the **SDI LOOP OUT 1 – 8** ports by synchronizing your video output according to the Rainier 3G´s internal clock. This way, the frames will be displayed matching the vertical sync parameter. The audio output is also synchronized to the same speed.
Source Name 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8	Src-1 / Src-2 / Src-3 / Src-4 / Src-5 / Src-6 / Src-7 / Src-8	Display current content of source window's label string.
Module	No setting allowed	Displays the module selected.

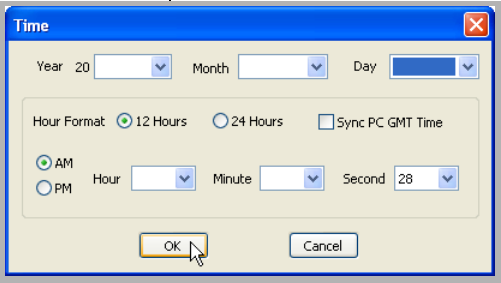
Properties	Options (click on the item to set)	Description
Resolution		Set the display resolution. **NOTE:** Make sure that the resolution of the input source (as background image) is the same as the resolution of the **OUTPUT-1** / **2** ports for video output to the monitor display.
Output Timing	Normal / VESA	**Normal** output timing is designed for some brands of monitor display that do not support the **VESA** standard. **NOTE 1:** When using the DVI-to-VGA adapter on **OUTPUT-1** / **2** ports for output to monitor display, make sure to set it to **VESA**. **NOTE 2:** Only 1080p 50 / 60 Hz and 720p 50 / 60 Hz is supported on **SDI OUT-1** / **2** ports upon setting **Normal**. No video output from these ports is possible when set at **VESA**.
Cascade In	Internal / DVI-I Auto (Digital First)	Select cascade mode with internal or digital signal first when expecting both analog and digital signals.
Frame Store	On / Off	Turn on or off synchronization to lessen the occurrence of frame delay when multiple modules are cascaded.
Meter Transparency	0 to 8	Use the slider to set the transparency (default is 8, no transparency) of the meter appearing onscreen.

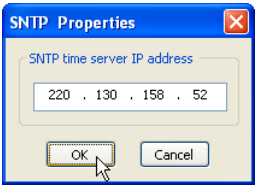
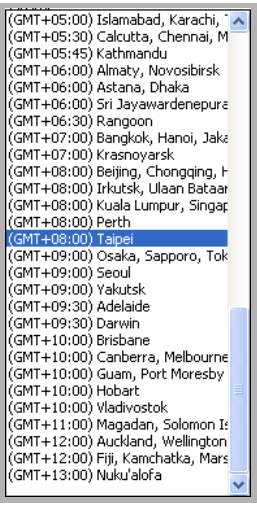
Properties	Options (click on the item to set)	Description
Label B-G Transparency	0 to 8	Use the slider to set the background transparency level (default is 8, no transparency) of the label appearing onscreen.
DVI Output Parameters / Cable Driving / Pre-emphasis	On / Off	Prevents display abnormalities when connecting a long DVI cable from the **OUTPUT-1** / **2** port of the last cascaded module to the monitor display.
DVI Output Parameters / Hot Plug / Re-sync	On / Off	Allows the re-synching of the connected monitor display during hot-plugging.
DVI Output Parameters / Hot Plug Re-sync / Delay (seconds)	0 to 31	Use the slider to set the time delay when re-synching of the monitor display occurs after hot-plugging. **NOTE:** This item is only available when the previous item is set **On**.
Tally / Enable	On / Off	Turn on or off tally for a window or all the windows in a group.
Tally / Flash	On / Off	Turn on or off flashing tally for a window or all the windows in a group.
Tally 1 / 2 / 3 Color (LED 1 / 2 / 3)		Select tally color of your preference. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue** / **Saturation** / **Luminance** as well as the **Red** / **Green** / **Blue** values. **NOTE:** **Tally 1** and **2** are triggered by GPIO while **Tally 3** is triggered via serial communication.
Event / GPI1 Event / LED 1	On / Off	Turn on or off the LED in case a GPI event occurs.
Event / GPI1 Event / Label	On / Off	Turn on or off the label in case a GPI event occurs.
Event / GPI1 Event / Border	On / Off	Turn on or off the border in case a GPI event occurs.

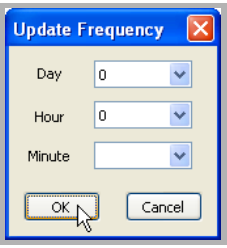
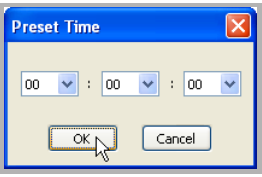
Properties	Options (click on the item to set)	Description
Serial Event / Tally 1 / 2 / 3 Event / LED 1 / 2 / 3	On / Off	Turn on or off the LED in case a serial event occurs.
Serial Event / Tally 1 / 2 / 3 Event / Label	On / Off	Turn on or off the label in case a serial event occurs. NOTE: Tally 1 / 2 / 3 can trigger either Label or Border, but there is only one border or label. If tally 1 / 2 / 3 are triggered simultaneously, the display priority will be tally 1, tally 2, then tally 3.
Serial Event / Tally 1 / 2 / 3 Event / Border	On / Off	Turn on or off the border in case a serial event occurs.
Signal Format Color / Font Color		Select the font color on the signal of your preference. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue** / **Saturation** / **Luminance** as well as the **Red** / **Green** / **Blue** values.
Signal Format Color / B-G Color		Select the background color on the signal of your preference. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue** / **Saturation** / **Luminance** as well as the **Red** / **Green** / **Blue** values.
Check Audio – SPDIF / Enable	On / Off	Enable or disable the SPDIF audio signal check function (via proprietary DB9 to 4 BNC breakout cable).
Check Audio – SPDIF / Source	Mute / HDMI input embedded audio / External input AES/AD / Window 1 / 2 / 3 / 4 SDI embedded audio	Select the source of SPDIF audio signal check function (via proprietary DB9 to 4 BNC breakout cable).
Check Audio – SPDIF / Channel	Channel 1 / 2 / 3 / 4	Enable the channel's SPDIF audio signal check function (via proprietary DB9 to 4 BNC breakout cable).

Properties	Options (click on the item to set)	Description
Check Audio – SPDIF / Sound	Stereo / Mono Left / Mono Right	Select **Stereo** or **Mono Left** / **Right** SPDIF audio signal check function (via proprietary DB9 to 4 BNC breakout cable).
Check Audio – SPDIF / Audio Delay (millisecond)	0 to 170	Set the duration (millisecond) of audio delay for SPDIF audio signal check function (via proprietary DB9 to 4 BNC breakout cable).
Check Audio – SPDIF / Volume Control	On / Off	Enable or disable SPDIF audio signal's volume control check function (via proprietary DB9 to 4 BNC breakout cable).
Check Audio – SPDIF / Volume	0 to 3.875	Set the volume level of SPDIF audio signal's check function (via proprietary DB9 to 4 BNC breakout cable).
Check Audio – HDMI / Bypass Enable	On / Off	Enable or disable the HDMI audio signal check function (via proprietary DB9 to 4 BNC breakout cable).
Check Audio – HDMI / Source	Mute / HDMI input embedded audio / External input AES/AD / Window 1 / 2 / 3 / 4 SDI embedded audio	Select the source of HDMI audio signal check function (via proprietary DB9 to 4 BNC breakout cable).
Screen Logo / Enable	On / Off	Enable or disable the display of screen logo.
Screen Logo / Display	Background / Foreground	Set the screen logo to be a part of the image in the window (display in foreground) or to appear as a background on the image window.
Screen Logo / Hide (Full screen mode)	On / Off	Enable or disable the display of screen logo during full screen mode. **NOTE:** This item is only available when you select **Foreground** in the previous item **Display**.

Properties	Options (click on the item to set)	Description
Screen Logo / Picture		Click the "open" button … to select the bitmap file to upload as the screen logo (e.g., 1920×1200 image would take approximately 180 seconds or more depending on the system's resource allocation).
Screen Logo / Picture / Position / X / Y		Specify the location of the screen logo appearing on screen by setting the X and Y coordinates.
Clock / Enable	On / Off	Enable or disable the display of clock on screen.
Clock / Display	Analog / Digital	Select the type of clock to be displayed on screen for each module. **NOTE:** Screen logo is not displayed when analog clock is selected.
Clock / Analog Clock Size	192×192 / 224×224 / 256×256 / 320×320 / 384×384	Select the size of the analog clock to be displayed onscreen.
Clock / Border Enable	On / Off	Enable or disable the display of border on digital clock. **NOTE:** This option is only available for digital clock display.
Clock / Hide (Full screen mode)	On / Off	Enable or disable the display of clock during full screen mode.
Clock / Font Color		Set the color of the font appearing on the clock. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue** / **Saturation** / **Luminance** as well as the **Red** / **Green** / **Blue** values.
Clock / Background Color		Set the background color appearing on the clock. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue** / **Saturation** / **Luminance** as well as the **Red** / **Green** / **Blue** values.

Properties	Options (click on the item to set)	Description
Clock / B-G Transparency	0 to 8	Set the background transparency level of the clock. **0** signifies total transparency.
Clock / Size / X / Y		Specify the location of the clock appearing on screen by setting the X and Y coordinates.
Clock / Size / Width / Height		Specify the size of the clock appearing on screen by setting the **Width** and **Height** values.
Clock / Analog Clock Parts		Set the color of the **Hour** / **Minute** / **Second Hand** appearing on the analog clock. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue** / **Saturation** / **Luminance** as well as the **Red** / **Green** / **Blue** values.
Clock / Time / Source	RTC / SNTP / LTC / Counter / Sync to Master	Activate time code feature by selecting **RTC**, **Counter**, or **LTC**. You can also synchronize the clock of the Master module by selecting **Sync to Master**. The **SNTP** time code feature allows the module to synchronize the clock with an external SNTP time server. The **IP** port on the rear of the module can control, as well as receive, time code information simultaneously. **NOTE:** Sync to Master is only available for the module belonging to the same group.
Clock / Time / RTC Properties	 Set the time appearing on the real time clock. **NOTE:** This item is only available when you select **RTC** and **LTC**.	

Properties	Options (click on the item to set)	Description
Clock / Time / SNTP Properties		Set the **SNTP time server IP address** for synchronizing the clock with an external SNTP time server. **NOTE:** This item is only available when you select **SNTP**.
Clock / Time / Pause	On / Off	Allows you to pause / resume the time count.
Clock / Time / Count	Up / Down	Select the counting method: **Up** (forward) or **Down** (reverse). **NOTE:** This item is only available when you select **Counter**.
Clock / Time / Reset Counter		Allows you to reset the counter. **NOTE:** This item is only available when you select **Counter**.
Clock / Time / Format	12 Hours / 24 Hours	Select the clock display format.
Clock / Time / Display Frame	On / Off	Enable / disable clock's display frame. **NOTE:** This item is only available when you select **LTC**.
Clock / Time / Daylight Saving	On / Off	Enable or disable the Daylight Saving time function.
Clock / Time / Time Zone		Specify the desired time zone shown on the particular monitor display.

Properties	Options (click on the item to set)	Description
Clock / Time / Broadcast Sync Time	On / Off	Enable or disable the broadcast sync time function. **NOTE:** This item is only available when you select **RTC** and **SNTP**.
Clock / Time / Sync Time (Day:Hour: Minute)		Set the update frequency. **NOTE:** This item is only available when you select **RTC** and **SNTP**.
Clock / Time / Preset Time / Select Index (For Counter)	Index 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8	Select which index preset time to use. **NOTE:** This item is only available when you select **Counter** and **Sync to Master**.
Clock / Time / Preset Time / Index 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8		Set the preset time displayed for each input source. **NOTE:** This item is only available when you select **Counter** and **Sync to Master**.
Clock / Label / Display	On / Off	Enable or disable display of the clock's label (default label is "Clock").
Clock / BMP Label	On / Off	Activate or deactivate the universal fonts for the on screen clock.
Clock / Label / Text	Clock	Display current content of label string.
Clock / Label / Size	1 / 2 / 3 / 4	Specify the clock label's size.
Clock / Label Font Color		Specify the clock label's font color. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue** / **Saturation** / **Luminance** as well as the **Red** / **Green** / **Blue** values.

Properties	Options (click on the item to set)	Description
Clock / Label Background Color		Specify the clock label's background color. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue** / **Saturation** / **Luminance** as well as the **Red** / **Green** / **Blue** values.

The following table shows the **Properties** setting for each window in the Rainier 3G:

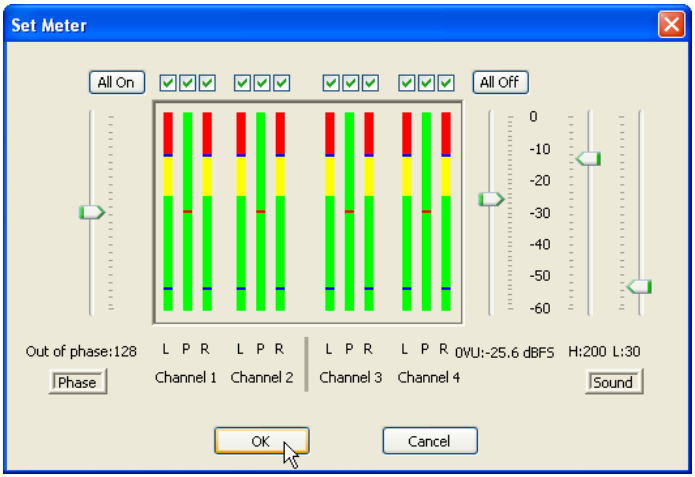
Properties	Options (click on the item to set)	Description
Window 1, 2, 3, 4	No setting allowed	Displays the Rainier 3G module's selected window number.
Window Enable	On / Off	Show or hide the selected window on the monitor display. Upon selecting **Off**, the hidden window will appear on the **Available Windows** panel (see below). To show the window again just drag the icon into the main screen (you can also drag multiple windows).
Display Signal Format	On / Off	Display or hide the window's input signal format.
Display AFD	On / Off	Standard AFD codes provide information about where in the coded picture the active video is and also the "protected area" which is the area that needs to be shown. Outside of the protected area, edges at the sides or the top can be removed without missing anything significant. The Rainier 3G can then use this information, together with knowledge of the display shape and user preferences, to choose a presentation mode.

Properties	Options (click on the item to set)	Description
		NOTE: This item is only available when you select **On** for the previous item **Display Signal Format**.
Input Source	1 / 2 / 3 / 4 / 5 / 6 / 7 / 8	Select the input signal source of the window (e.g., if you select the value **1** for the four windows, then the four windows would be displaying the same input signal 1).
Size / X / Y		Specify the location of the window appearing on screen by setting the **X** and **Y** coordinates.
Size / Width / Height		Specify the size of the window appearing on screen by setting the **Width** and **Height** values. You can directly input the value, use the left / right button (**Width**) and up / down button (**Height**), as well as the keyboard's **Ctrl** + left / right arrow (**Width**) and **Ctrl** + up / down arrow (**Height**) keys. **NOTE:** To prevent distortion on the window's image (for "interlaced" input signal), make sure the height of the image (excluding label and border) **IS NOT** smaller than one-half of the vertical active region of input source (e.g., if resolution is set at 1080i 50 Hz then the image's height must not be less than 540 pixels).
Size / Lock Position	On / Off	Lock or unlock the position of the window appearing on screen.
Label / Display	On / Off	Display or hide the label appearing on the window. Keep in mind that each window supports one line of text.

Properties	Options (click on the item to set)	Description
Label / Display Type	D-Name S-Name UMD D-Name / S-Name D-Name / UMD S-Name / UMD D-Name / S-Name / UMD	Display the “Destination Name.” Display the “Source Name.” Display the “under monitor display.” Display both the D-Name and S-Name Display both the D-Name and UMD. Display both the S-Name and UMD Display all (D-Name, S-Name, UMD).
BMP Label	On / Off	Activate or deactivate the universal fonts for the window’s on screen label.
Label / Destination Name		Input the text string appearing on label of the window (up to 32 characters).
Label / Size	1 / 2 / 3 / 4	Specify the window’s label size.
Label / Font Color		Specify the window label’s font color. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue** / **Saturation** / **Luminance** as well as the **Red** / **Green** / **Blue** values.
Label / Background Color		Specify the window label’s background color. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue** / **Saturation** / **Luminance** as well as the **Red** / **Green** / **Blue** values.
Label / Fill Background	On / Off	Allow the label background to fill the entire width of the window.
Label / Outside	On / Off	Place the label outside the window.
Aspect Auto Detect / Enable	On / Off	Turn on or off automatic detection of the input signal’s aspect ratio. For HD-SDI input signal, the aspect ratio will be 16:9. For SD-SDI / composite, the aspect ratio setting can be 4:3 / 16:9.

Properties	Options (click on the item to set)	Description
Aspect Auto Detect / Sync Type	Default / AFD	Upon selecting **Default**, the aspect ratio will follow your settings on the next two (2) items: HD-SDI (fixed at 16:9) and SD-SDI (4:3 / 16:9). Upon selecting **AFD**, the "protected area" that will be shown onscreen takes priority.
Aspect Auto Detect / Fit Window Size	On / Off	Upon selecting **On**, and if on the previous item **Sync Type→Default** was selected; the image will fit the window size (fixed at 16:9 for HD-SDI or 4:3 / 16:9 for SD-SDI / composite). Upon selecting **On**, and if on the previous item **Sync Type→AFD** was selected; the image will fit the window size based on the affixed AFD code (if included).
Meter / Enable	On / Off	Turn on or off the audio meter appearing on screen on the window.

Properties	Options (click on the item to set)	Description
Meter / Layout & Alarm Trigger		Upon clicking **Change**, the following screen appears.

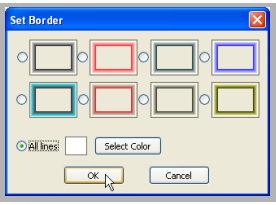


The Rainier 3G is capable of displaying embedded audio as VU (volume unit) meters inside the video window. Embedded audio is divided into four groups, with a master and secondary channel for each group. This allows you to display the left and right VU meters of either the master or secondary channel on the left and right side of the window just as the menu depicts.

NOTE: When there is no audio detected, you will NOT see any VU meters.

Adjust the **Phase** (**Out of phase** slider), **VU** (one slider), **Sound** (**H** / **L** sliders).

Meter / Outside	On / Off	Allow the location of the audio meter to be outside the video area.
Meter 1 2 Group	1 / 2 / 3 / 4	Select the audio meter's group (embedded audio). **NOTE for 3G / 1.5G HD-SDI signal:** Selecting the primary channel without embedded audio will cause the secondary channel to lose its audio output.
Meter 3 4 Group	1 / 2 / 3 / 4	Select the audio meter's group (embedded audio).
Meter / Width	2 / 4 / 6 / 8 / 10 / 12 / 14	Set the audio meter's width.

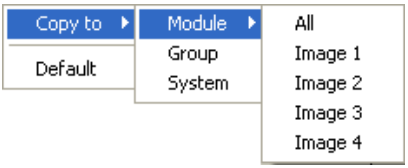
Properties	Options (click on the item to set)	Description
Meter / Ballistics	PPM / VU	Select the meter's ballistics. Meters which monitor audio levels are typically one of two varieties: VU (Volume Unit) or PPM (Peak Program Meters). Though both perform the same function, they accomplish the function in very different manners. A VU meter displays the average volume level of an audio signal. A PPM displays the peak volume level of an audio signal. For a steady state sine wave tone, the difference between the average level (VU) and the peak level (PPM) is about 3 dB. But for a complex audio signal (speech or music), the difference between the average level (VU) and the peak level (PPM) can be 10 to 12 dB! This difference between the reading of a VU meter and a PPM is known as the crest factor.
Meter / A.AGain	0 to 127	Set the audio meter's analog audio gain's value.
Safe Area / Enable	On / Off	Display or turn off the safe area marker of window.
Safe Area / Left / Top / Right / Bottom (%)	0 to 100	Freely adjust the horizontal (**Left** and **Right**) and vertical (**Top** and **Bottom**) markers. **NOTE:** This item is only available when the previous item is set **On**.
Border / Enable	On / Off	Display or turn off border of window.
Border / Width	0 / 1 / 2 / 3 / 4 / 5 / 6	Set width of the border for window.
Border / Default Type		Select the type of 3D border for the window.

Properties	Options (click on the item to set)	Description
Border / Color / Line 1 / 2 / 3 / 4 / 5 / 6		Change the border color as each pixel / line can be a different color.
Image Adjustment / Brightness	0 to 255	Adjust the brightness quality of the input signal.
Image Adjustment / Saturation	0 to 127	Adjust the saturation quality of the input signal.
Image Adjustment / Contrast	0 to 127	Adjust the contrast quality of the input signal.
Image Adjustment / Hue	–128 to 127	Adjust the hue quality of the input signal.
Alarm / Enable	On / Off	Enable or disable the alarm feature.
Alarm / Video Alarm / Enable	On / Off	Turn on or off the “no video” signal.
Alarm / Video Alarm / Border / Red Color	On / Off	Set the image border to the color **Red** as warning.
Alarm / Video Alarm / Border / Flash	On / Off	Set the image border to **Flash** as warning.
Alarm / Audio Alarm / Enable	On / Off	Enable audio loss detection that can be monitored by a single channel or group.
Alarm / Audio Alarm / No Audio Alarm (Single Meter)	On / Off	Turn on or disable the alarm that is triggered when no audio is detected.
Alarm / Audio Alarm / Border / Red Color	On / Off	Set the image border to the color **Red** as warning.
Alarm / Audio Alarm / Border / Flash	On / Off	Set the image border to **Flash** as warning.

Properties	Options (click on the item to set)	Description
Alarm / Audio Alarm / Response Time / Signal In / Out	0.25 to 49.75	Set the **Signal In** / **Out** alarm response time, such as when inputting the signal or change of status from "abnormal" to "normal."

NOTE: Right-click an item (with icon) on the **Properties** window (except with icon) and click the following to quickly apply the settings to –

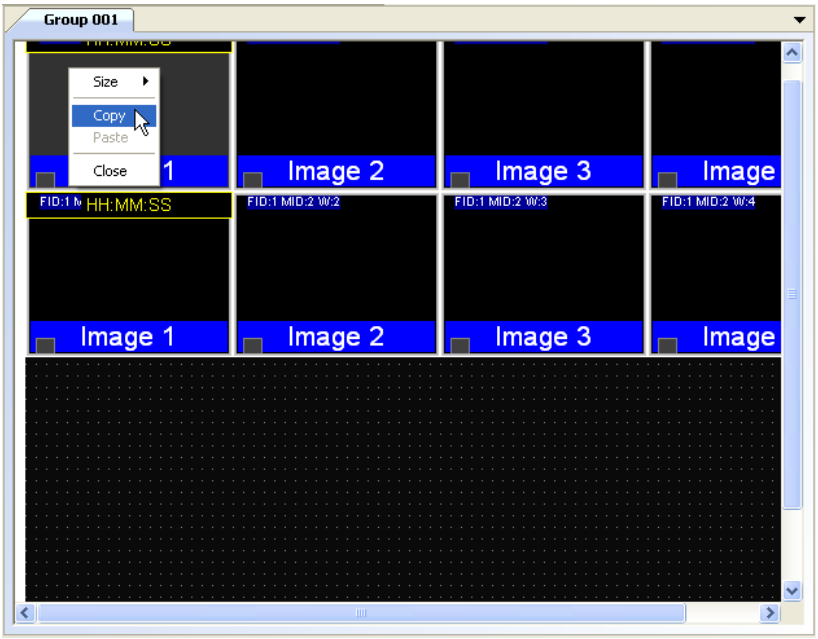
- all the windows in the particular (**Module→All**)
- to a particular window (**Module→Image 1** / **2** / **3** / **4**)
- all the modules belonging to the same (**Group**)
- to the entire (**System**), or
- return it to the (**Default**) setting.



2.4 Copy Window Properties

The properties of a window can be copied to another window on the same module, as well as between cascaded modules.

1. To copy the properties right-click a window and select **Copy**.

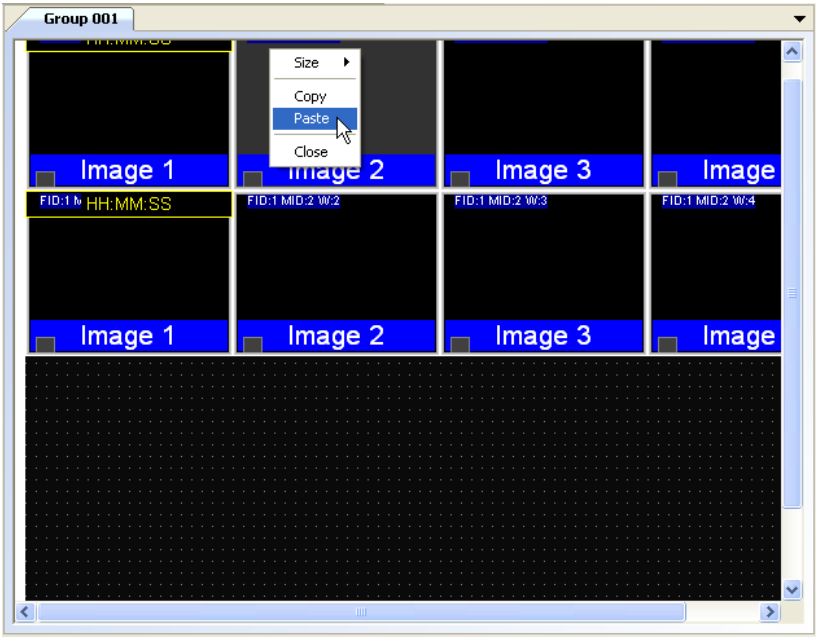


The properties that can be copied include the following:

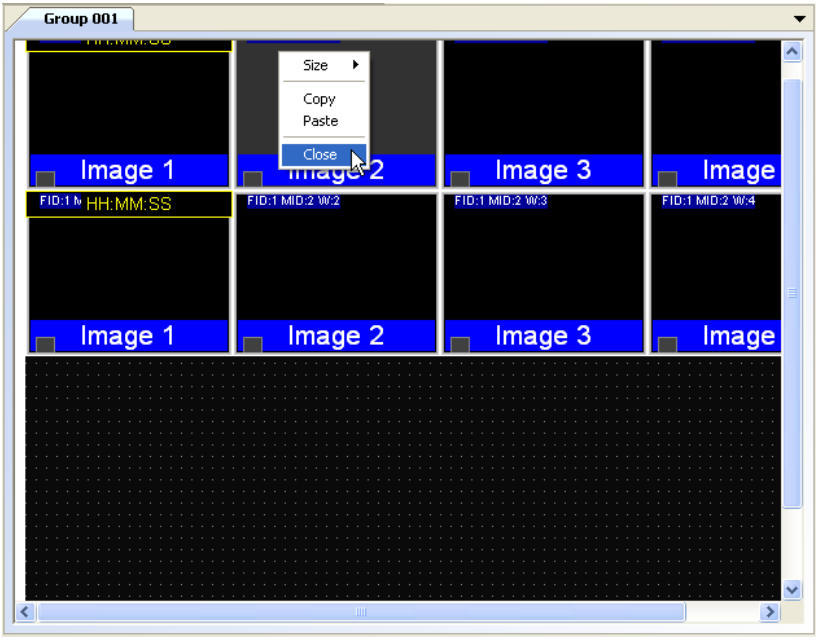
- Window size
  – width and
  – height
- Label
  – on / off switch
  – type (ANSI or BMP label)
  – font color and
  – background color

- Border
  – on / off switch
  – width and
  – color

2. Select a window to copy the properties to and right-click on the window and then select **Paste**.

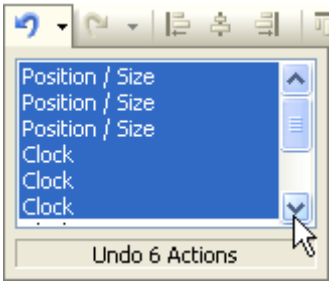


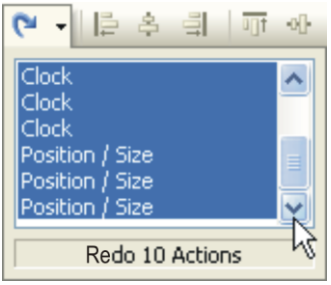
NOTE: You can also close a particular window by clicking **Close**. The Window would appear as an icon on the **Available Windows** pane. To activate the window again just use the mouse to drag the window into the main area.



2.5 Undo / Redo

Clicking the allow you to undo the previous step; while clicking the allow you to redo the previous step that was undone.

To undo 

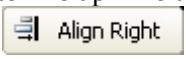
or redo 

multiple actions click the drop-down arrow symbol beside the undo / redo button, then highlight and click the actions to be undone or redone. Click the scrollbar to highlight more than 6 actions.

The following actions will clear the list of undo / redo actions:

- Load / save preset file
- Set display resolution
- Group reset
- Change group setup
- Set to default state

2.6 Align Windows

You can align a set of windows horizontally or vertically. You can choose how you want the windows to line up in relation to each other. For example, clicking the **Align Right** button (

) aligns the right edges of the windows with each other.

To align a set of windows horizontally:

1. Select the windows by clicking the first window with the left mouse button and the succeeding windows using the keyboard's **Ctrl** key + left mouse button.

   NOTE: Other computer applications that are currently running which use the same **Ctrl** key + left mouse button hotkey may disable multiple window selection in your Phoenix-Q program. Close the other program first before using the **Ctrl** key + left mouse button in Phoenix-Q.

2. To indicate how you want the windows to line up with each other click one of the following buttons. The alignment follows the position of the last window selected.

   - Top

   - Middle

   - Bottom

   NOTE: To undo alignment of windows just click the **Undo** button repeatedly according to the number of windows that were aligned with the last selected window.

To align a set of windows vertically:

1. Select the windows by clicking the first window with the left mouse button and the succeeding windows using the keyboard's **Ctrl** key + left mouse button.

   NOTE: Other computer applications that are currently running which use the same **Ctrl** key + left mouse button hotkey may disable multiple window selection in your Phoenix-Q program. Close the other program first before using the **Ctrl** key + left mouse button in Phoenix-Q.

2. To indicate how you want the windows to line up with each other click one of the following buttons. The alignment follows the position of the last window selected.

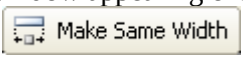
   - Left

   - Center

   - Right

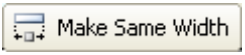
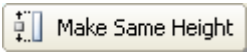
   NOTE: To undo alignment of windows just click the **Undo** button repeatedly according to the number of windows that were aligned with the last selected window.

2.7 Copy Window Size

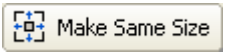
This function allows a set of windows to copy the width, height, and size of a window appearing onscreen. For example, clicking the **Make Same Width** button () would cause the selected windows to have the same width.

To modify the size of windows:

1. Select the windows by clicking the first window with the left mouse button and the succeeding windows using the keyboard's **Ctrl** key + left mouse button.
2. To indicate how you want the windows to appear onscreen click one of the following buttons. The window's size will follow the width / height / size of the last window selected.

   - Copy width 
   - Copy height 

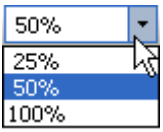
   NOTE: To prevent distortion on the window's image (for "interlaced" input signal), make sure the height of the image (excluding label and border) **IS NOT** smaller than one-half of the vertical active region of input source (e.g., if resolution is set at 1080i 50 Hz then the image's height must not be less than 540 pixels).

   - Copy size 

   NOTE: To undo window's size modification just click the **Undo** button repeatedly according to the number of windows that were modified except the last selected window.

2.8 Using the Zoom Tool

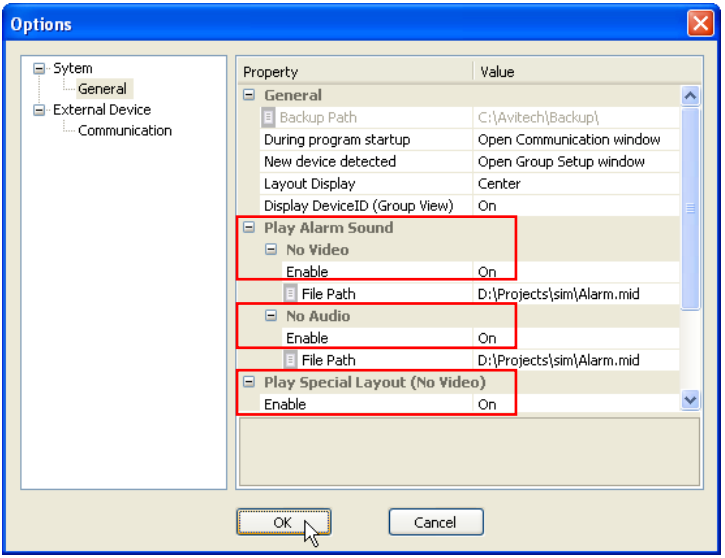
By default the main display area of your Phoenix-Q program is shown at a **50 %** magnification; meaning the entire layout (single or multiple windows) is visible at one-half magnification within the main display area. However, you can set a custom level of magnification for viewing windows. Zoom in (**100 %**) to get a closer look at image detail; zoom out to (**25 %**) view a larger portion of the image or the entire image.



2.9 Start / Stop Alarm Sound and Special Layout

Before starting or stopping playing of alarm sound when no video or no audio occurs as well as display of special screen layout when no video occurs make sure to enable the feature. To find out click **System→Options** on the Phoenix-Q program's drop-down menu.

The following window appears. The items highlighted in red must be set at **On**.



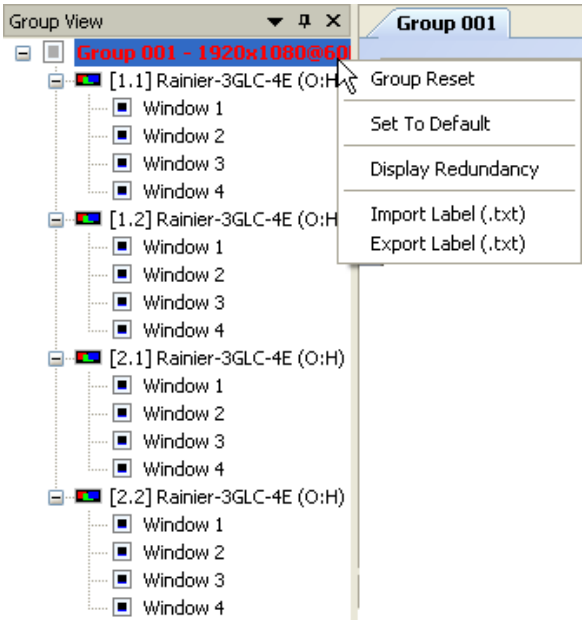
Otherwise, the icons would be disabled (grayed-out). Click the first icon to activate alarm sound alert when either **No Video** or **No Audio** occurs. Also, click the third icon to activate special screen layout alert when **No Video** occurs.

When an alarm sounds and you want to shut it off click the second icon.

When the special screen layout alert occurs and you want to deactivate it click the last icon. Notice that when the special screen layout alert occurs many functions on the Phoenix-Q program are disabled (e.g., **Group View** window, **Properties** window, main layout area move or resize window, etc.).

2.10 Set Group Parameters

The settings here only affect the modules included in a particular group. Upon right-clicking a particular Group # (e.g., **Group 001**) heading portion the following menu will appear.



Group Reset

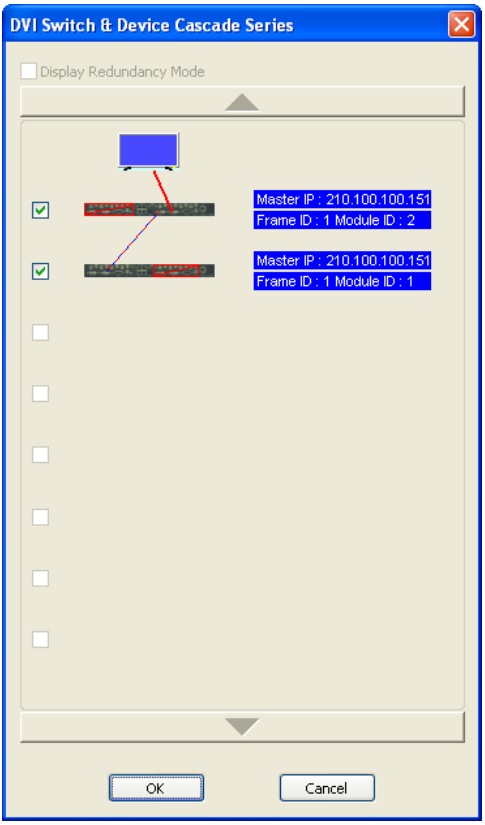
This allows you to refresh all modules belonging to the same group.

Set to Default

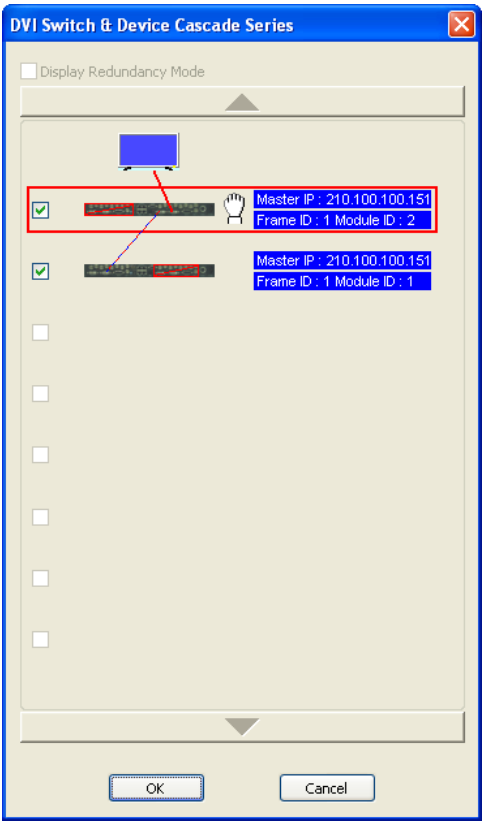
This allows you to return all modules belonging in the same group to its default setting (1280×1024 resolution, 60 Hz vertical frequency, Normal output timing, and default preset layout).

Display Redundancy

Upon clicking **Display Redundancy** the following sample screen appears.


DVI Switch & Device Cascade Series
Display Redundancy Mode
Master IP : 210.100.100.151
Frame ID : 1 Module ID : 2
Master IP : 210.100.100.151
Frame ID : 1 Module ID : 1
OK
Cancel

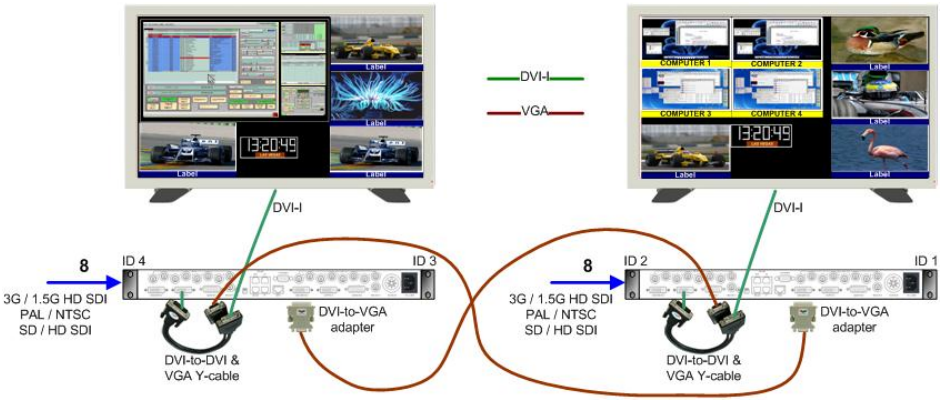
Click the checkbox to enable or disable “cascade in” for each ID number. Use the mouse to change the ID number designation only (drag by using the symbol); this will not affect the actual physical connection of the Rainier 3G.


DVI Switch & Device Cascade Series
Display Redundancy Mode
Master IP : 210.100.100.151
Frame ID : 1 Module ID : 2
Master IP : 210.100.100.151
Frame ID : 1 Module ID : 1
OK
Cancel

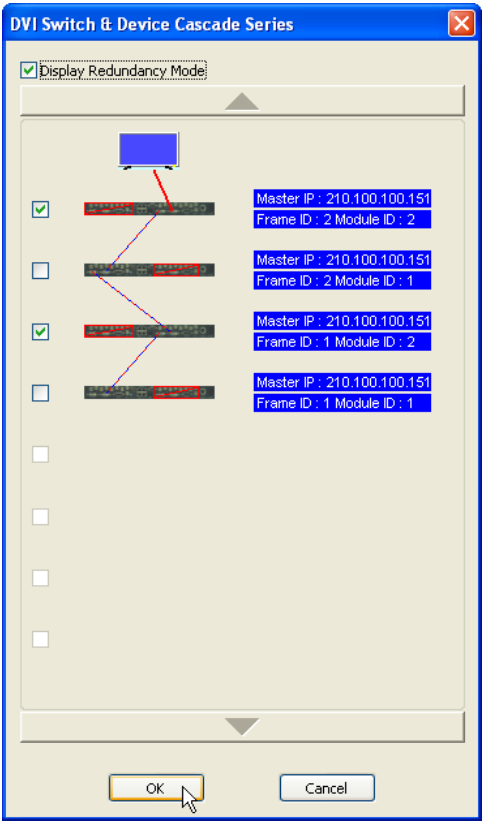
IMPORTANT: Make sure the ID number designation matches the actual physical connection of the cascaded Rainier 3G.

Example

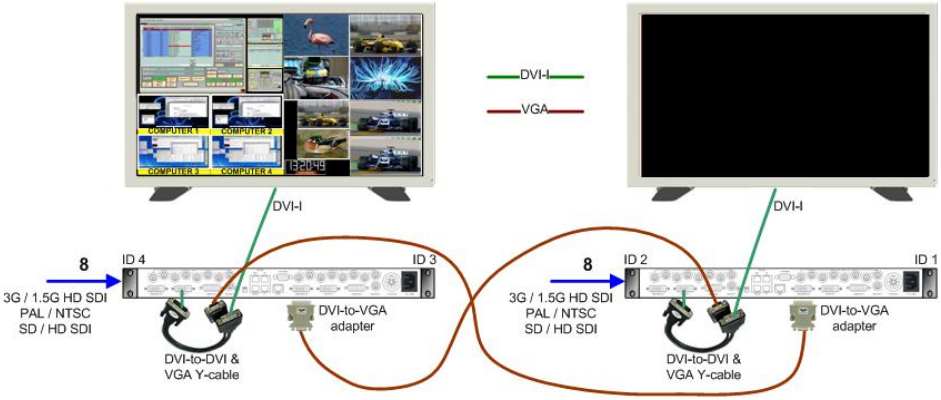
The DVI output of the last module of each group is feeding the monitor display. The VGA output of the last module of each group is also connected to the background input of the first module of the other group. During normal operation the input of the first module of each group is disabled (switched to default black background).



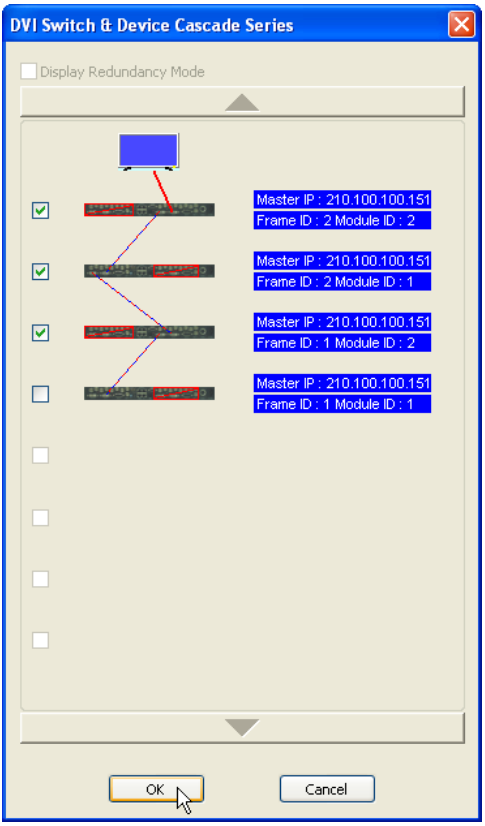
The following setting is shown to affect the above sample scenario. Take note that the **Display Redundancy Mode** item must be enabled.


DVI Switch & Device Cascade Series
Display Redundancy Mode
Master IP : 210.100.100.151
Frame ID : 2 Module ID : 2
Master IP : 210.100.100.151
Frame ID : 2 Module ID : 1
Master IP : 210.100.100.151
Frame ID : 1 Module ID : 2
Master IP : 210.100.100.151
Frame ID : 1 Module ID : 1
OK
Cancel

In case one monitor display fails a preset combining all the inputs of both groups can be recalled through the looping cable. In case the other monitor display fails another preset addressing this situation can be recalled. The same concept can be extended to more than two groups.



The following setting is shown to affect the above sample scenario.

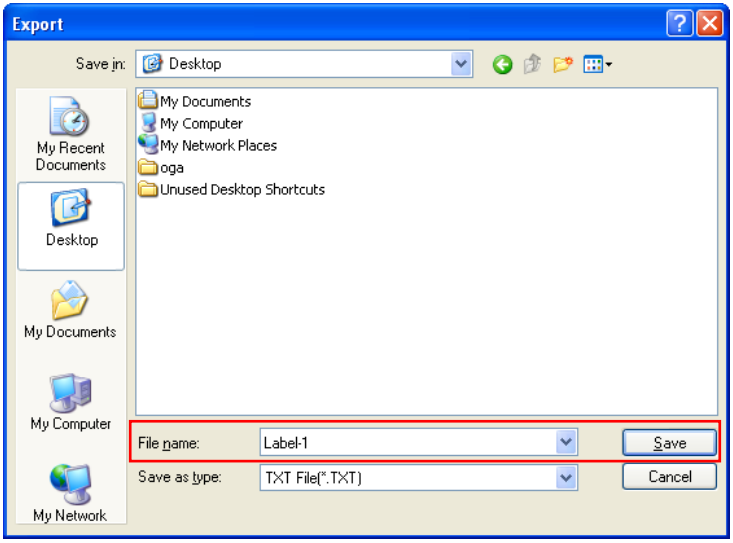

DVI Switch & Device Cascade Series
Display Redundancy Mode
Master IP : 210.100.100.151
Frame ID : 2 Module ID : 2
Master IP : 210.100.100.151
Frame ID : 2 Module ID : 1
Master IP : 210.100.100.151
Frame ID : 1 Module ID : 2
Master IP : 210.100.100.151
Frame ID : 1 Module ID : 1
OK
Cancel

Import / Export Label (.txt)

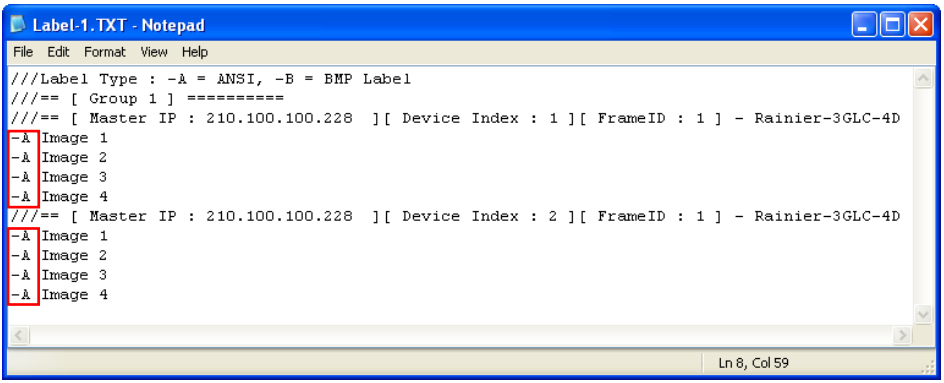
This allows you to import label from / export label to Microsoft® Notepad to be edited externally. The most convenient way is to export the file (label) as:

- **Label** (**ANSI** – up to 30 byte / characters; can contain the English characters A – Z, a – z, 0 – 9), or
- **BMP Label** (Unicode – up to 15 byte / characters; useful for displaying text other than the English language) **txt** file

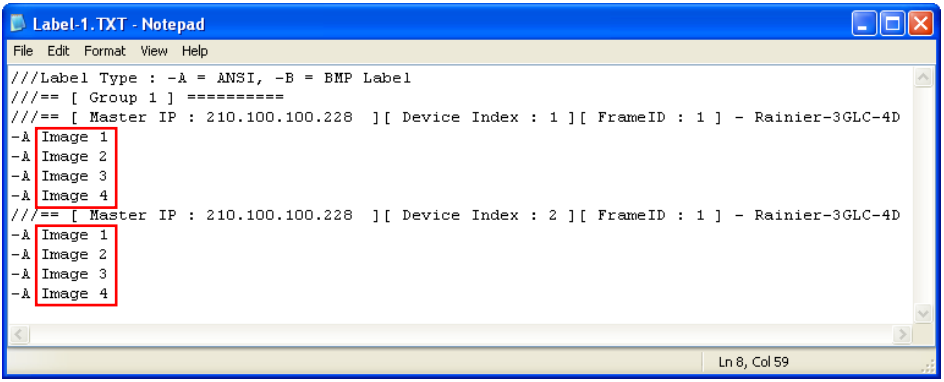
1. Click **System→Export Label (.txt)** and when the next screen appears assign a filename. Then click **Save**.



2. Using Microsoft® Notepad open the exported text file. The first row of text provides a guide to the two (2) types of labels (**A** for **ANSI** / **B** for **BMP Label**). Change the label type as desired by typing **A** or **B** after the dash "**–**" (highlighted in red as shown below).


Label-1.TXT - Notepad
File Edit Format View Help
///Label Type : -A = ANSI, -B = BMP Label
///== [Group 1] ==========
///== [Master IP : 210.100.100.228][Device Index : 1][FrameID : 1] - Rainier-3GLC-4D
-A Image 1
-A Image 2
-A Image 3
-A Image 4
///== [Master IP : 210.100.100.228][Device Index : 2][FrameID : 1] - Rainier-3GLC-4D
-A Image 1
-A Image 2
-A Image 3
-A Image 4
Ln 8, Col 59

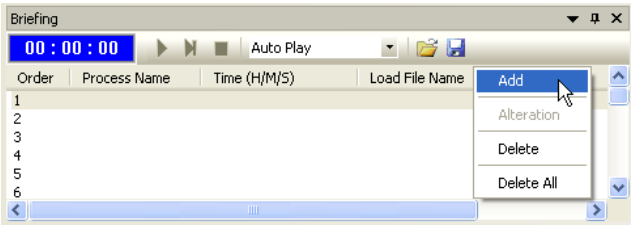
3. Then edit the text in the file (highlighted in red as shown below). When you are done editing the label save the **`txt`** file and import it. The on screen labels will be updated.


Label-1.TXT - Notepad
File Edit Format View Help
///Label Type : -A = ANSI, -B = BMP Label
///== [Group 1] ==========
///== [Master IP : 210.100.100.228][Device Index : 1][FrameID : 1] - Rainier-3GLC-4D
-A Image 1
-A Image 2
-A Image 3
-A Image 4
///== [Master IP : 210.100.100.228][Device Index : 2][FrameID : 1] - Rainier-3GLC-4D
-A Image 1
-A Image 2
-A Image 3
-A Image 4
Ln 8, Col 59

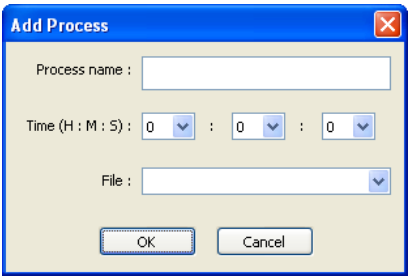
2.11 Briefing

This function allows you to cycle between presets for a slideshow effect.

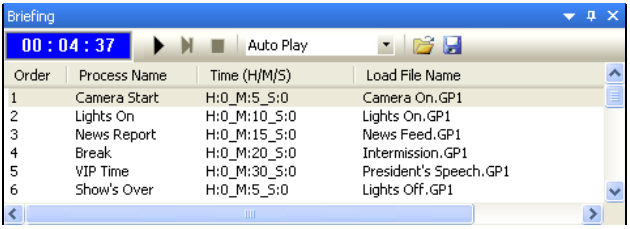
1. Use the mouse to right-click the title bar and when the menu appears click **Add**.



2. When the **Add Process** window appears enter the **Process name**, specify the **Time (H : M : S)**, then select the previously saved preset **File**. Click **OK** to continue. Continue adding new processes as necessary.

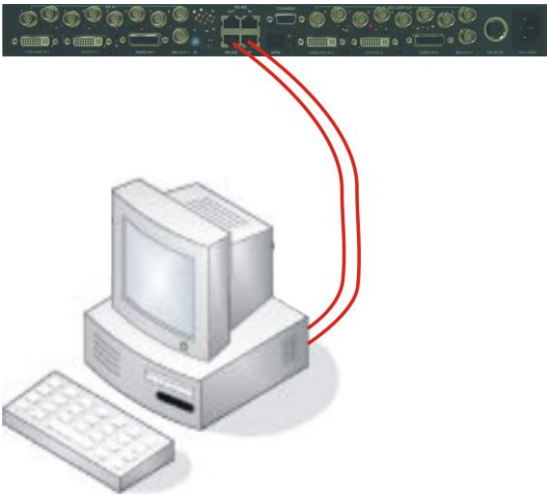


3. On the drop-down menu you can select **Auto Play**, **Auto Play (Repeat)**, **Manual**, or **Manual (Repeat)**. Click play ▶ to start viewing the slideshow.



3 Avitech ASCII Protocol

The Rainier 3G supports the ASCII command prompt interface. The serial port (**RS-232**) and Ethernet port (**IP**) on the Rainier 3G can also be used to interface for control over RS-232 / IP. This chapter familiarizes you with using the Avitech ASCII Protocol (AAP) of the Rainier 3G.



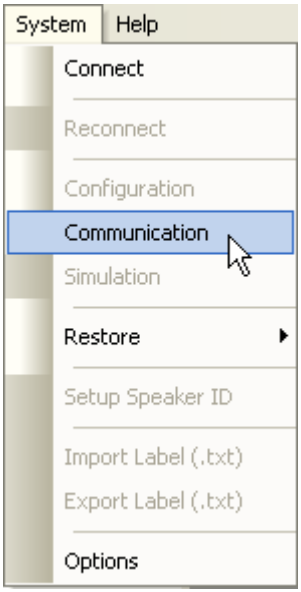
3.1 Setting the RS-232 Port

Before using the ASCII X command via the RS-232 interface, make sure that the COM (RS-232) port on the computer is set at Normal (8-bit data, 1 stop bit, no parity, and no flow control). The default baud rate is 57600 bps (configurable). To use the ASCII X commands, use the Phoenix-Q software to correctly set the Group and Module Number of the Rainier 3G.

Method 1: Via Ethernet Connection

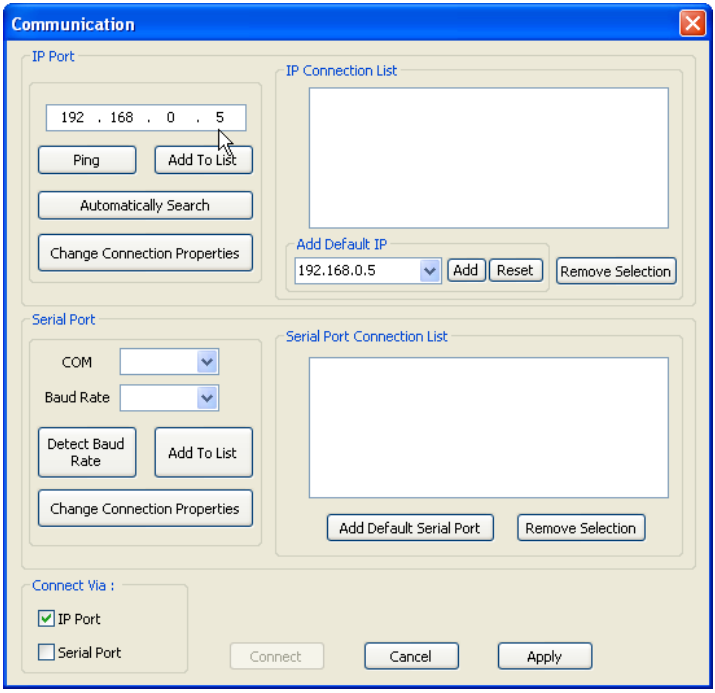
To configure the Rainier 3G's COM (RS-232) port from the computer's Ethernet port, perform the following steps:

1. On the Phoenix-Q configuration software, click **System→Communication**.

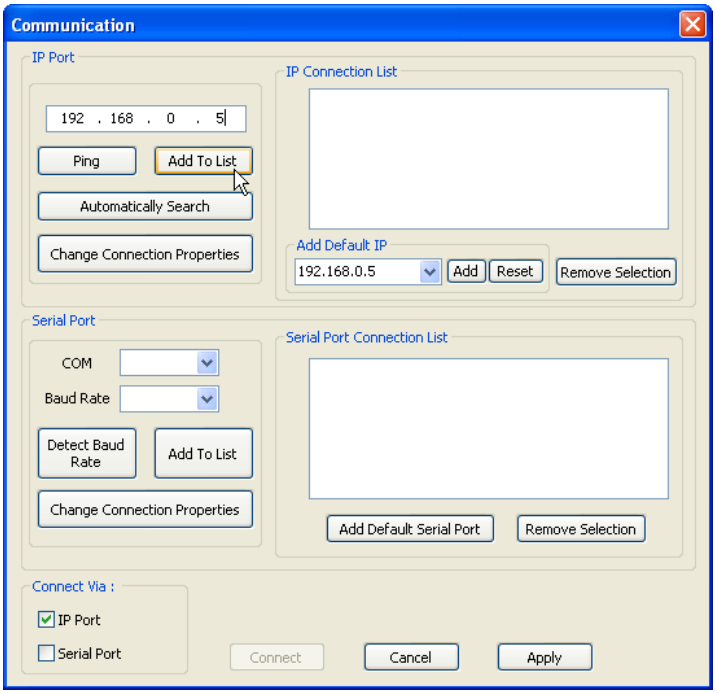


> **NOTE:** This item is not available when the computer is connected to the Rainier 3G multiviewer(s).

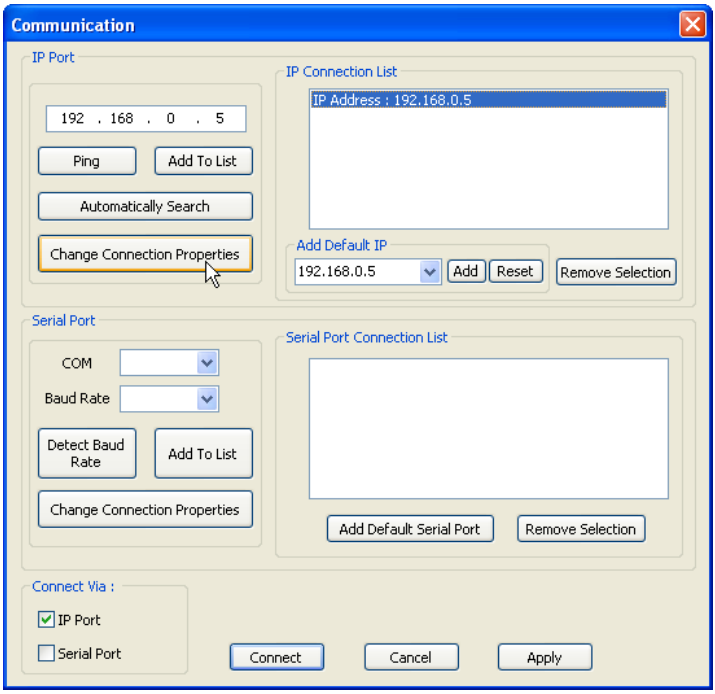
2. Make sure to specify the correct IP address of the Rainier 3G that you want to connect to.



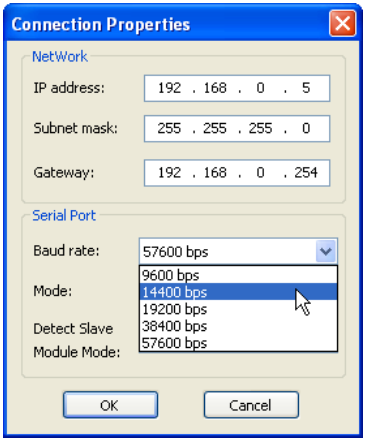
3. Then click the **Add to List** button.



4. Click the **Change Connection Properties** button.



5. Select the desired **Baud rate** for the Rainier 3G's **Serial Port**. And then click **OK** to exit.

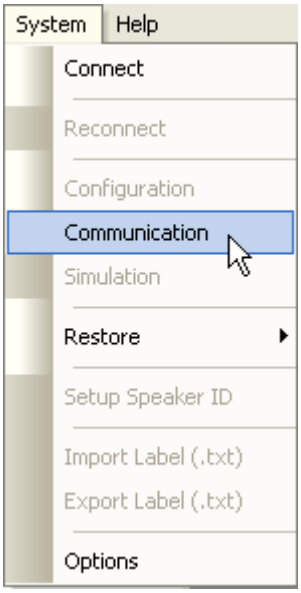


6. Click **Apply**, and then **Cancel** to exit.

Method 2: Via Serial Connection

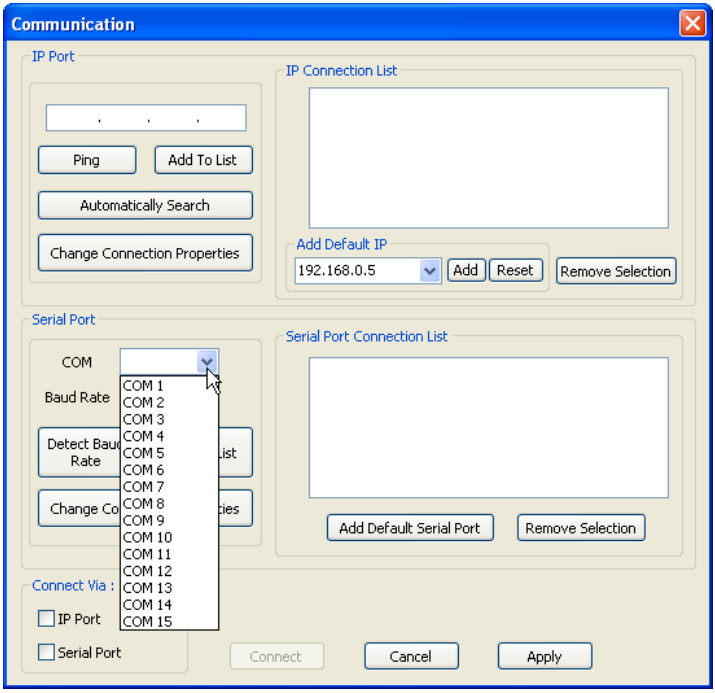
To configure the Rainier 3G's COM (RS-232) port from the computer's serial port, perform the following steps:

1. On the Phoenix-Q configuration software, click **System→Communication**.

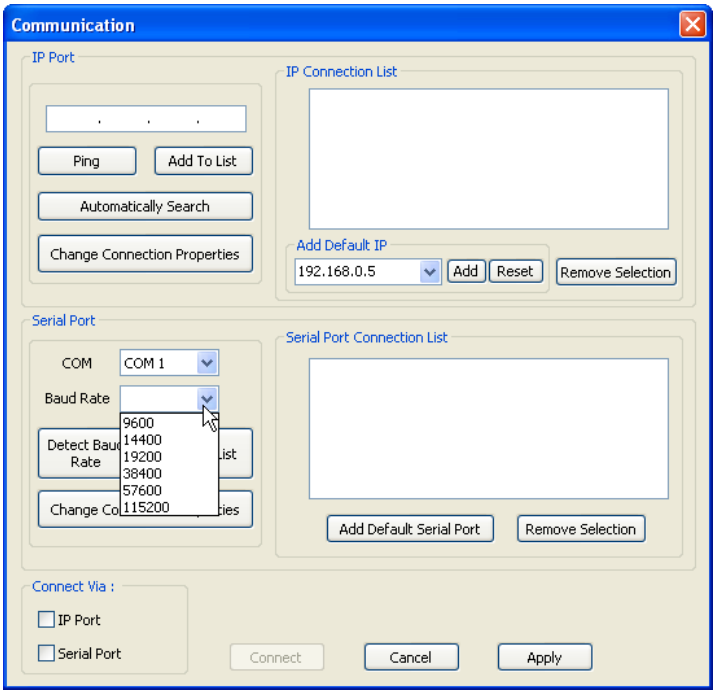


> **NOTE:** This item is not available when the computer is connected to the Rainier 3G multiviewer(s).

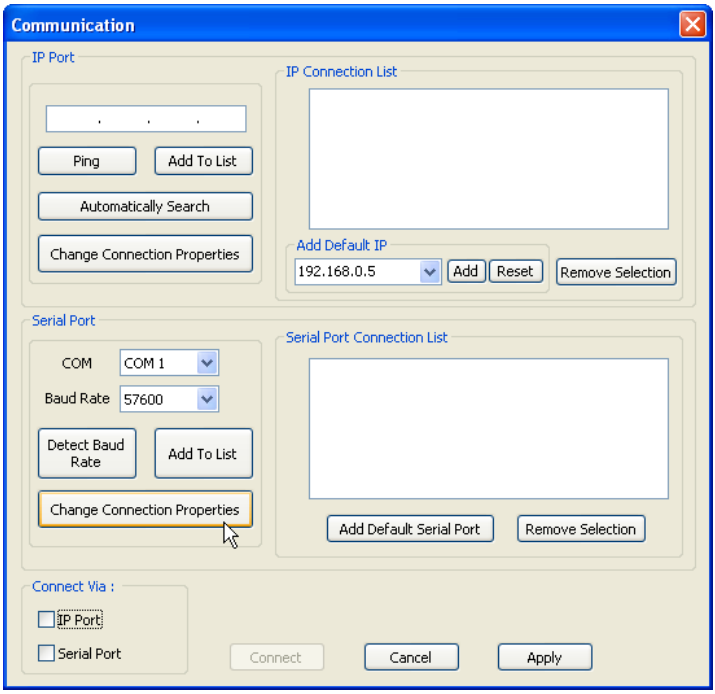
2. Make sure to specify the same **COM** port setting as your controlling computer.



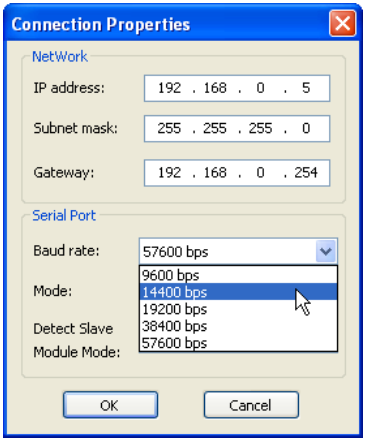
3. Next, select the correct **Baud Rate**.



4. Then, click the **Change Connection Properties** button.



5. Select the desired **Baud rate** for the Rainier 3G's **Serial Port**. And then click **OK** to exit.

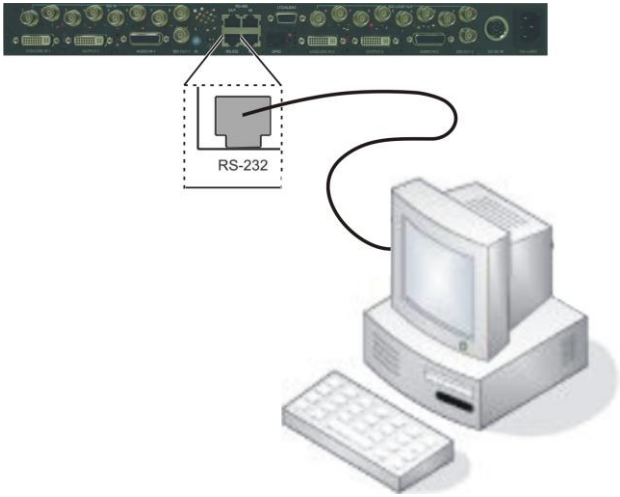


6. Click **Apply**, and then **Cancel** to exit.

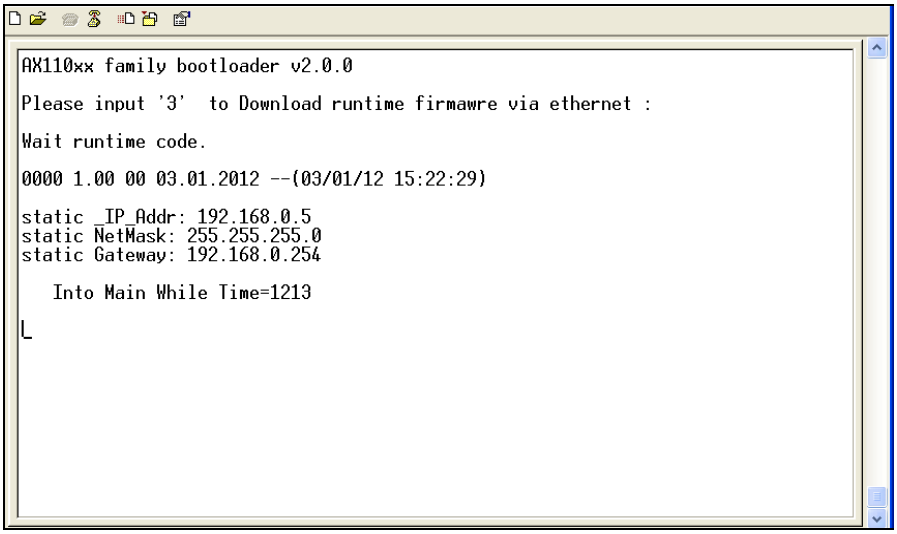
3.2 Entering the ASCII X Command Interface (via RS-232)

To startup the ASCII X command interface, perform the following steps:

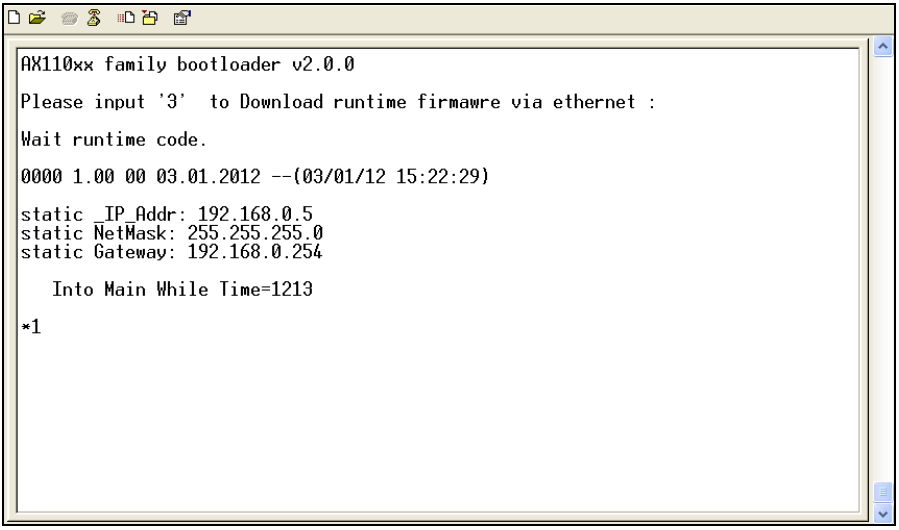
1. Connect the COM port (computer) to the Rainier 3G RS-232 port, and make sure that power supply is available.



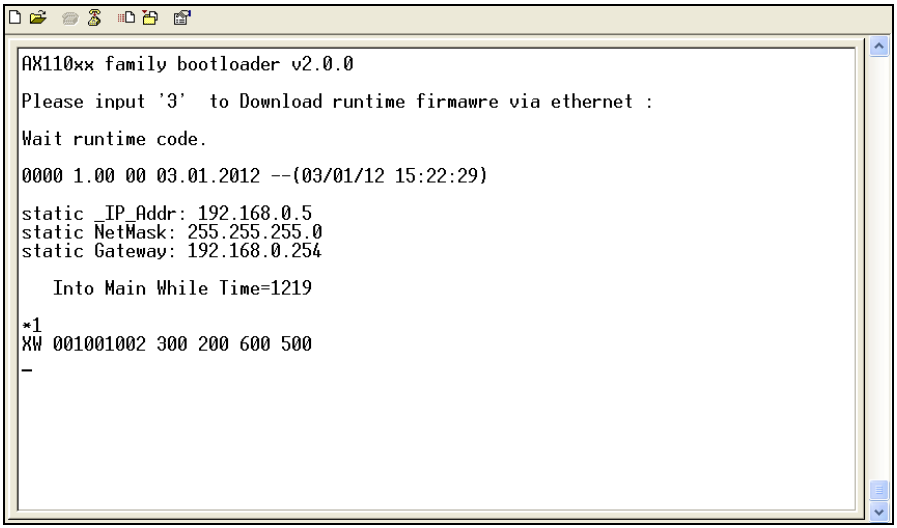
2. Open the computer's serial communication program (e.g., Microsoft® Windows HyperTerminal). After setting the correct COM port and baud rate setting, the following sample screen may appear.


AX110xx family bootloader v2.0.0
Please input '3' to Download runtime firmawre via ethernet :
Wait runtime code.
0000 1.00 00 03.01.2012 --(03/01/12 15:22:29)
static _IP_Addr: 192.168.0.5
static NetMask: 255.255.255.0
static Gateway: 192.168.0.254
Into Main While Time=1213

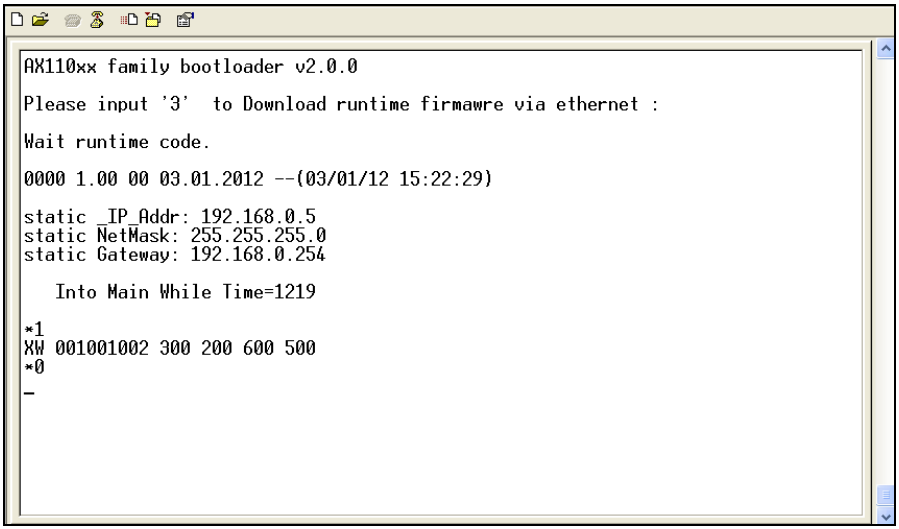
3. Enable the Rainier 3G's RS-232 command mode by sending "*1 + 0x0D" 3-bytes to the Rainier 3G's RS-232 port. In HyperTerminal, key in "*1" and then press the **Enter** key.


AX110xx family bootloader v2.0.0
Please input '3' to Download runtime firmawre via ethernet :
Wait runtime code.
0000 1.00 00 03.01.2012 --(03/01/12 15:22:29)
static _IP_Addr: 192.168.0.5
static NetMask: 255.255.255.0
static Gateway: 192.168.0.254
Into Main While Time=1213
*1

4. Key in the desired ASCII command (e.g., **XW 001001002 300 200 600 500**).


AX110xx family bootloader v2.0.0
Please input '3' to Download runtime firmawre via ethernet :
Wait runtime code.
0000 1.00 00 03.01.2012 --(03/01/12 15:22:29)
static _IP_Addr: 192.168.0.5
static NetMask: 255.255.255.0
static Gateway: 192.168.0.254
Into Main While Time=1219
*1
XW 001001002 300 200 600 500

5. Upon finishing, disable the Rainier 3G's RS-232 command mode by sending "*0 + 0x0D" 3-bytes to the Rainier 3G's RS-232 port. In HyperTerminal, key in "*0" and then press the **Enter** key.


AX110xx family bootloader v2.0.0
Please input '3' to Download runtime firmawre via ethernet :
Wait runtime code.
0000 1.00 00 03.01.2012 --(03/01/12 15:22:29)
static _IP_Addr: 192.168.0.5
static NetMask: 255.255.255.0
static Gateway: 192.168.0.254
Into Main While Time=1219
*1
XW 001001002 300 200 600 500
*0

3.3 Entering the ASCII X Command Interface (via IP)

Packing ASCII Command

Function: transmit the bundled ASCII X command into the module

Applicability: to all modules

Command format:

Byte Size	4	2	1	2	1	1	1	1	1	N	1
Byte Position	0 – 3	4 – 5	6	7 – 8	9	10	11	12	13	14 –	14 + N -1
Column	Header	Command Length	Reserved	CMD ID	Frame ID	Frame ID Inverse	Module ID Length	Module ID	Process Number	X Command	Chksum

- Byte 0 **–** 3: 0x55 0xAA 0x5A 0xA5 fixed header pattern
- Byte 4 **–** 5: shows the command length (use little-endian display method)
- Byte 6: 0x00, reserved column
- Byte 7 – 8: 0x02 0x13, command ID
- Byte 9: fixed value 0x00, frame ID
- Byte 10: fixed value 0xFF, inverse of frame ID
- Byte 11: 0x01, the last portion consists of 1-byte for module ID's column
- Byte 12: fixed value 0xFC (**ALL_MB_MODULE_ID** signifies that all cascaded main boards must receive and execute it), module ID
- Byte 13: processor number, since it is not up to this column so the default value is 0x00
- Byte 14~: N-byte that corresponds to text string in ASCII X command
- Byte 14+N-1: checksum byte

3.4 ASCII X Command Format

The ASCII X command is comprised of the following parts:

Header	Group/Module/Window Assignment	Parameter 1	Parameter 2	. . .

The following is a list of rules to follow when entering the ASCII X command:

- It is acceptable to enter commands in small or capital letters, and the five columns are separated by a space.
- **Header** = **x** + command character
- **Group/Module/Window Assignment (GGGMMMPPP)** = is comprised of six Arabic numerals. This is used in designating the device's Group/Module/ Window Assignment.

  Group = is comprised of the first three numbers (**001** – **099**), **000** is used to pertain to all groups.

  Module = is comprised of the middle three numbers (**001**, **002**, . . .), **000** is used to pertain to all modules.

  Window Assignment = is comprised of the last three numbers (**001**, **002**, . . .), **000** is used to pertain to all window assignments, **098** is used to pertain to logo, **099** is used to pertain to clock.
- **Parameter 1** and **Parameter 2** could pertain to the color assignment (**RRRGGGBBB**) which is comprised of nine Arabic numerals, this is used in designating the color; on / off switch where "**1**" signifies ON while "**0**" signifies OFF; etc.; depending on the type of command.

The following is a list of available ASCII X commands:

XA

Format: **XA GGGMMMPPP** [NbyN(**2** (2×2),**3** (3×3),……)] [Nth(**1**,**2**,……) position of window]

Function: to set the automatic arrangement of windows.

Examples: **XA 001009000 2 1**
Set group 1 module 9 to a 2×2 map position 1,2,3,4 (quad).
XA 001002002 3 2
Place group 1 module 2 window 2 to a 3×3 map position 2.
XA 001002000 6 13
Place group 1 module 2 to a 6×6 map position 13,14,15,16.
XA 001000000 2 1
Set all modules in group 1 to quad.
XA 001000000
Automatically arrange all windows in group 1 to the optimum size and position.
XA 000000000
Automatically arrange all groups' windows to the optimum size and position.

XB

Format: **XB GGGMMMPPP B**[order]/**L**[abel] **1** (on) / **0** (off)

Function: to turn on / off blinking of border or label.

Examples: **XB GGGMMMPPP L 0**
Set GGGMMMPPP to turn blinking label off.
XB GGGMMMPPP B 1
Set GGGMMMPPP to turn blinking border on.

XC

Format: **XC GGGMMMPPP** (when **PPP** is **099** = clock) **B**[order]/**L**[abel background]/**T**[ext] **RRRGGGBBB** (red ratio **000** – **255**, green ratio **000** – **255**, blue ratio **000** – **255**) (**N**o**D**im**C**olor)

Function: to set the border of the window (with / without 3D effect), clock, label's background, and text color.

Description: **B**[order] to signify the border of the window.
L[abel] to signify the label's background color.
[**N**o**D**im**C**olor] to signify the border's 3D effect. You can add [**N**o**D**im**C**olor] to remove the border's 3D effect. Just enter **NDC** to signify **N**o**D**im**C**olor.

Examples: **XC 001001001 B 000255000**
sets the border color of group 1, module 1, window 1, as green with 3D effect.
XC 002002002 B 255000000 ndc
sets the border color of group 2, module 2, window 2, as red but without 3D effect.
XC 003003003 L 000000255
sets the label background color of group 3, module 3, window 3, as blue with 3D effect.
XC 002002099 B 255000255
sets the digital clock border color of group 2, module 2, as pink.
XC 001001099 L 255000255
sets the clock label background color of group 1, module 1, as pink.

XF

Format: **XF GGGMMMPPP 1** (on) / **0** (off)

Function: to turn on / off the video window's full screen mode.

Examples: **XF 001001004 1**
sets group 1, module 1, window 4, to full screen mode display.
XF 001001004 0
disables full screen mode for group 1, module 1, window 4, and reverts it back to its former display size.

XI

Format: **XI GGGMMMPPP** (where **PPP** is **1** – **4** = window) [video input source **1** – **8** channel]

Function: to set the input source channel.

Examples: **XI GGGMMM000 1**
sets GGGMMM all windows to have channel 1 as the input source.

XK

> **NOTE:** "000" is the fixed value for **PPP** in XK command.

Format 1: **XK GGGMMMPPP P**[reset] **S**[et]/**L**[oad] Preset ID (**1** – **8**) **HH MM SS**

Function: to set the time and method of counting (free run mode only).

Examples: **XK GGGMMMPPP P S 1 11 22 33**
sets GGGMMMPPP's preset time ID1 = 11:22:33.
XK GGGMMMPPP P L 1
sets GGGMMMPPP's time to be the same as preset time of ID1.

Format 2: **XK GGGMMMPPP B**[roadcast] **HH**[our] **MM**[inute] **SS**[econd] **FF**[rame number*]

Function: to broadcast the master clock's time.

Examples: **XK GGGMMMPPP B 11 22 33 00**
sets GGGMMMPPP to broadcast (sync) the master clock's time as 11:22:33:00.

> ***NOTE:** Moving video is composed of a number of frames transmitted every second that combine in the viewer's mind to create the illusion of movement. The nominal rate for film is 24 frames per second, while the rate for video is 30 frames per second.

Format 3: **XK GGGMMMPPP S**[ource] **0** (RTC) / **1** (SNTP) / **2** (LTC) / **3** (free run – use current time as timer source) / **4** (sync to master) [**HH MM SS**] **0** (count up) / **1** (count down) [counting method – free run mode only] **0** (hide frame number) / **1** (show frame number) [LTC or sync to master mode only]

Function: to select the clock input (source) and set the format for control.

Examples: **XK GGGMMMPPP S 3 1**
sets GGGMMMPPP free run as time source and count down as counting method.
XK GGGMMMPPP S 0
sets GGGMMMPPP RTC as time source.
XK GGGMMMPPP S 2 1
sets GGGMMMPPP LTC as time source and show frame number.

Format 4: **XK GGGMMMPPP C**[alibrate] [time period] (in seconds – use the second module) [**0** (do not sync time to master module) / **1** (sync time to master module)]

Function: to set the calibration time and sync time to master module.

Examples: **XK GGGMMMPPP C 3600 0**
execute calibration in 3,600 seconds and do not sync clock to master module.
XK GGGMMMPPP C 60 1
execute calibration in 60 seconds and sync clock to master module.

Format 5: **XK GGGMMMPPP O**[n / off] **0** (off) / **1** (on) [**0** (clock is off) / **1** (clock is on) when in full screen mode] [**0** (fully transparent) to **8** (not transparent) digital clock to background]

Function: to turn on / off the clock display (includes when in full screen mode) and set the clock's transparency to background.

Examples: **XK GGGMMMPPP O 1 1 0**
sets GGGMMMPPP to display the digital clock, clock is on when in full screen mode, and set to full transparency.
XK GGGMMMPPP O 0 0 0
sets GGGMMMPPP to turn off the clock.

Format 6: **XK GGGMMMPPP D**[aylight saving time] **0** (off) / **1** (on) [time zone ID]

Function: to turn on / off daylight saving time and adjust the clock's time zone ID.

Description:

ID	Time Zone
0	(GMT-12:00) Eniwetok, Kwajalein
1	(GMT-11:00) Midway Island, Samoa
2	(GMT-10:00) Hawaii
3	(GMT-09:00) Alaska
4	(GMT-08:00) Pacific Time (US and Canada); Tijuana
5	(GMT-07:00) Arizona

ID	Time Zone
6	(GMT-07:00) Mountain Time (US and Canada)
7	(GMT-06:00) Central America
8	(GMT-06:00) Central Time (US and Canada)
9	(GMT-06:00) Mexico City
10	(GMT-06:00) Saskatchewan
11	(GMT-05:00) Bogota, Lima, Quito
12	(GMT-05:00) Eastern Time (US and Canada)
13	(GMT-05:00) Indiana (East)
14	(GMT-04:00) Atlantic Time (Canada)
15	(GMT-04:00) Caracas, La Paz
16	(GMT-04:00) Santiago
17	(GMT-03:30) Newfoundland
18	(GMT-03:00) Brasilia
19	(GMT-03:00) Buenos Aires, Georgetown
20	(GMT-03:00) Greenland
21	(GMT-02:00) Mid-Atlantic
22	(GMT-01:00) Azores
23	(GMT-01:00) Cape Verde Island
24	(GMT) Casablanca, Monrovia
25	(GMT) Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
26	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
27	(GMT+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Prague
28	(GMT+01:00) Brussels, Copenhagen, Madrid, Paris
29	(GMT+01:00) Sarajevo, Skopje, Sofija, Vilnius, Warsaw, Zagreb
30	(GMT+01:00) West Central Africa
31	(GMT+02:00) Athens, Istanbul, Minsk
32	(GMT+02:00) Bucharest
33	(GMT+02:00) Cairo
34	(GMT+02:00) Harare, Pretoria
35	(GMT+02:00) Helsinki, Riga, Tallinn
36	(GMT+02:00) Jerusalem
37	(GMT+03:00) Baghdad

ID	Time Zone
38	(GMT+03:00) Kuwait, Riyadh
39	(GMT+03:00) Moscow, St. Petersburg, Volgograd
40	(GMT+03:00) Nairobi
41	(GMT+03:30) Tehran
42	(GMT+04:00) Abu Dhabi, Muscat
43	(GMT+04:00) Baku, Tbilisi, Yerevan
44	(GMT+04:30) Kabul
45	(GMT+05:00) Ekaterinburg
46	(GMT+05:00) Islamabad, Karachi, Tashkent
47	(GMT+05:30) Calcutta, Chennai, Mumbai, New Delhi
48	(GMT+05:45) Kathmandu
49	(GMT+06:00) Almaty, Novosibirsk
50	(GMT+06:00) Astana, Dhaka
51	(GMT+06:00) Sri Jayawardenepura
52	(GMT+06:30) Rangoon
53	(GMT+07:00) Bangkok, Hanoi, Jakarta
54	(GMT+07:00) Krasnoyarsk
55	(GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi
56	(GMT+08:00) Irkutsk, Ulaan Bataar
57	(GMT+08:00) Kuala Lumpur, Singapore
58	(GMT+08:00) Perth
59	(GMT+08:00) Taipei
60	(GMT+09:00) Osaka, Sapporo, Tokyo
61	(GMT+09:00) Seoul
62	(GMT+09:00) Yakutsk
63	(GMT+09:30) Adelaide
64	(GMT+09:30) Darwin
65	(GMT+10:00) Brisbane
66	(GMT+10:00) Canberra, Melbourne, Sydney
67	(GMT+10:00) Guam, Port Moresby
68	(GMT+10:00) Hobart
69	(GMT+10:00) Vladivostok

ID	Time Zone
70	(GMT+11:00) Magadan, Solomon Island, New Caledonia
71	(GMT+12:00) Auckland, Wellington
72	(GMT+12:00) Fiji, Kamchatka, Marshall Island
73	(GMT+13:00) Nuku'alofa

Examples: **XK GGGMMMPPP D 1 32**
turn on GGGMMMPPP's daylight saving time, and set Bucharest as the clock's time zone.
XK GGGMMMPPP D 1 59
turn on GGGMMMPPP's daylight saving time, and set Taipei as the clock's time zone.
XK GGGMMMPPP D 0
turn off GGGMMMPPP's daylight saving time.

Format 7: **XK GGGMMMPPP A**[nalog] **1** (on = analog clock mode) / **0** (off = digital clock mode) **1** – **5** [analog clock bitmap ID display mode]

Function: to select the digital or analog clock display mode.

Examples: **XK GGGMMMPPP A 1 2**
sets GGGMMMPPP to use the analog clock bitmap ID #2 display mode.
XK GGGMMMPPP A 0
sets GGGMMMPPP to use the digital clock display mode.

Format 8: **XK GGGMMMPPP R**[TC] **HH**[our] **MM**[inute] **SS**[econd]

Function: to set the RTC timer's 24-hour clock format.

Examples: **XK GGGMMMPPP R 11 22 33**
sets GGGMMMPPP RTC timer as 11:22:33.

XL

Format: **XL GGGMMMPPP** (when **PPP** is **099** = clock) "**TEXT**" (label text string 32 ASCII characters maximum) [font size = **0** (maintain current size and label inside video) / **1** – **4** (font size and label inside video) / **128** (maintain current size and label outside video) / **129** – **132** (equivalent to font size 1 – 4 and label outside video)]

Function: to set the label's text, font size, and inside / outside video.

Examples: **XL 000000000 " CNN News Station "**
sets all window labels with text " CNN News Station. "
XL 000000000 3
sets all window labels with font size 3.
XL 001002099 3
sets group 1, module 2 clock's label with font size 3.
XL 000000000 " CNN News Station " 128
sets all window labels with text " CNN News Station "and label outside video.

XM

Format: **XM GGGMMMPPP ##** (resolution number) **1** (normal) / **0** (VESA) output timing

| NOTE: For **XM** command, only **GGG** is used. **MMM** and **PPP** are not applicable.

Function: to change the output resolution, the resolution number refers to the list of resolutions that Rainier 3G supports.

Description:

Resolution	Vertical Frequency		
	50 Hz	60 Hz	75 Hz
800 × 600	42	1	47
1024 × 768	31	2	11
1280 × 720	30	15	48
1280 × 768	32	22	49
1280 × 1024	29	9	12

Resolution	Vertical Frequency		
	50 Hz	60 Hz	75 Hz
1360 × 768	38	20	21
1400 × 1050	34	35	50
1440 × 900	46	45	51
1600 × 1200	39	10	52
1680 × 1050	41	40	53
1920 × 1080	28	26	N/A
1920 × 1200	37	36	N/A

Examples: **XM 001000000 10 0**
sets all the modules in group 1 to display at 1600×1200 resolution at 60 Hz vertical frequency, and VESA output timing mode.
XM 000000000 9 1
sets all the modules in all the groups to have a 1280×1024 resolution at 60 Hz vertical frequency, and normal output timing mode.

XN

Format: For turning on / off various options: **XN GGGMMMPPP** (when **PPP** is **099** = clock; **098** = user logo) option (**A**[larm]/**B**[order]/**I**[nfo AFD]/**L**[abel]/ **M**[eter]/**O**[n screen display]/**R**[atio aspect]/**S**[afe area]/**U**[ser logo in foreground]/**V**[ideo format display]/ **W**[indow]) **1** (on) / **0** (off).

> **NOTE:** The option **I**[nfo AFD] allows you to add the AFD ID (active format description identification) into the video format string.

Function: to turn on / off various options.

Examples: **XN GGGMMM099 W 0**
turns GGGMMM clock off.
XN GGGMMMPPP B 1
turns GGGMMMPPP border on.

XO

Format 1: For initializing the audio and setting the window's meter source:
XO GGGMMMPPP I[nitialize] **1** – **4** (Lgroup – for SDI input's embedded audio, group 1 – 4) **1** – **4** (Rgroup – for SDI input's embedded audio, group 1 – 4) / **5** (or AES) **1** (VU ballistics) / **2** (PPM).

> **IMPORTANT:** **DO NOT** select the same SDI group number for Lgroup and Rgroup.

Examples: **XO GGGMMMPPP I 1 5 1**
sets GGGMMMPPP Lgroup = 1 Rgroup = AES and VU ballistics.

Format 2: For setting the control board's S/PDIF audio output:
XO GGGMMMPPP O[utput] [select] **1** (main board S/PDIF) / **2** (control board cascade S/PDIF) [source] **0** (mute) / **1** (cascade video) / **2** (analog audio to digital converter / AES) / **3** (window 1) / **4** (window 2) / **5** (window 3) / **6** (window 4) [channel number] **1** / **2** / **3** / **4** [sound] **1** (stereo) / **2** (mono right) / **3** (mono left).

Examples: **XO 002002000 O 1 3 2 1**
sets the audio output of group 2, module 2 to select main board S/PDIF, source from window 1, channel 2, and stereo sound.
XO 002002000 O 2
sets the audio output of group 2, module 2 to select the control board cascade S/PDIF.

> **NOTE:** **PPP** can only be **000**, when outputting to a particular window and particular channel's audio; it will be based on the device's saved setting. When it cannot be determined then enter the value directly.

XP

Format: **XP GGGMMMPPP L**[oad] / **S**[ave] filename**.GP#** / **Latest** ("Latest" system file / **LatestAll** (both "Latest" and "Module.sys" system files)

Function: load a previously saved preset or save current layout to a preset. Load or save latest configuration to system files ("Latest" and "Module.sys")

Description: If the filename is not specified when saving the file, system will backup the file into flash memory.

Examples: **XP 001000000 L Group 1.GP1**
sets all the modules in group 1 to load the previously saved **`Group 1.GP1`** preset file
XP 002000000 S Group 2.GP2
saves the current layout of all modules in group 2 to a preset file **`Group 2.GP2`**
XP 001000000 S LatestAll
saves the current layout of all modules in group 1 into "Latest" and "Module.sys" system files.

XR

Format: **XR GGGMMMPPP 0** (off) / **1** (automatic aspect ratio on and use the manual aspect ratio value) / **3** (video embedded AFD aspect ratio on) / **5** (use the manual aspect ratio and set window size to fit aspect ratio) / **7** (use the video embedded AFD aspect ratio and set window size to fit aspect ratio) **SD** (width rate) **SD** (height rate) **HD** (width ratio) **HD** (height ratio)

NOTE: AFD stands for Active Format Description.

Function: to lock and adjust the video ratio.

Examples: **XR GGGMMM001 1 4 3 16 9**
sets GGGMMM001 SD video ratio as 4:3, HD video as 16:9.
XR 000000000 1 16 9 4 3
sets all windows' SD video ratio as 16:9, HD video as 4:3.
XR GGGMMMPPP 1 7 12 7 12
sets GGGMMMPPP's SD and HD video ratio as 7:12.
XR GGGMMMPPP 0
disables the function.
XR GGGMMMPPP 7
sets the AFD aspect ratio on and set the window size to fit this aspect ratio.

XS

Format: **XS GGGMMMPPP L**[abel] / **M**[eter) **0** (fully transparent) – **8** (not transparent)

Function: to set the label or meter's transparency.

Examples: **XS 001002000 L 8**
sets all window labels of group 1, module 2 to no transparency.
XS 001000000 M 3
sets all modules' meter in group 1 to transparency level 3.

> **NOTE:** All windows will share the same label transparency setting. That is, upon changing one window's label transparency, all other window's label transparency will also be changed simultaneously.

XT

Format: **XT GGGMMMPPP** [**0** is all tally / **1** – **3** = tally 1 – 3] **1** (on) / **0** (off)

Function: turn on or off the tally for a window or all the windows in a group.

Description: Designate the action of tally.

Examples: **XT 001002003 2 1**
activate tally 2 for window 3 in module 2 for group 1.
XT 001000000 0 0
close tally for all windows of all modules for group 1.

XU

Format: **XU GGGMMMPPP** [**0** is all video input ports / **1** – **8** = video input port number] **"TEXT"** (always center-aligned, supports ASCII characters only – include the quotation marks).

> **NOTE:** "000" is the fixed value for **PPP** in XU command.

Function: to set the umd (under monitor display) label's text string.

Examples: **XU 001002000 2 "UMD Label"**
sets group 1, module 2, use video input port number 2, umd label's text string as "UMD Label."

XV

Format: **XV GGGMMMPPP 1** (on) / **0** (off) [percentage of volume level] **0** – **400**

> **NOTE:** "000" is the fixed value for **PPP** in XV command.

Function: to set the S/PDIF audio's volume level.

Examples: **XV GGGMMM000 0**
turns GGGMMMPPP's S/PDIF audio to mute.
XV GGGMMM000 1 50
turns GGGMMMPPP's S/PDIF audio volume to half of input.

XW

Format: **XW GGGMMMPPP** (when **PPP** is **099** = clock; **098** = user logo / **1** – **4** = video window number) **X** position **Y** position [**W**(idth) **H**(eight)]

Function: to set the window's position and size.

> **NOTE:**
> - Both position (**X** and **Y**) and size [**W**(idth) and **H**(eight)] are expressed in pixel units.
> - Size entry [**W**(idth) and **H**(eight)] is optional.
> - For the user logo, only the position parameters (**X** and **Y**) are used.
> - To prevent distortion on the window's image (for "interlaced" input signal), make sure the height of the image (excluding label and border) **IS NOT** smaller than one-half of the vertical active region of input source (e.g., if resolution is set at 1080i 50 Hz then the image's height must not be less than 540 pixels).

Examples: **XW GGGMMMPPP 100 200 960 540**
sets GGGMMMPPP at (100,200) top-left position and (960,540) width, height.